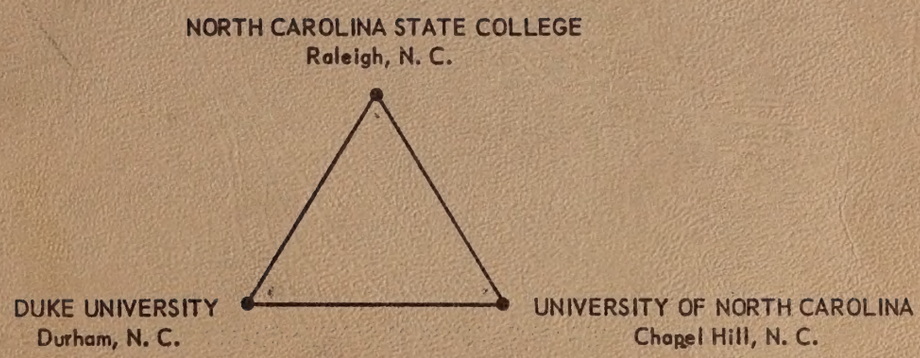
Inventory Of Selected Resources
Of
The Research Triangle



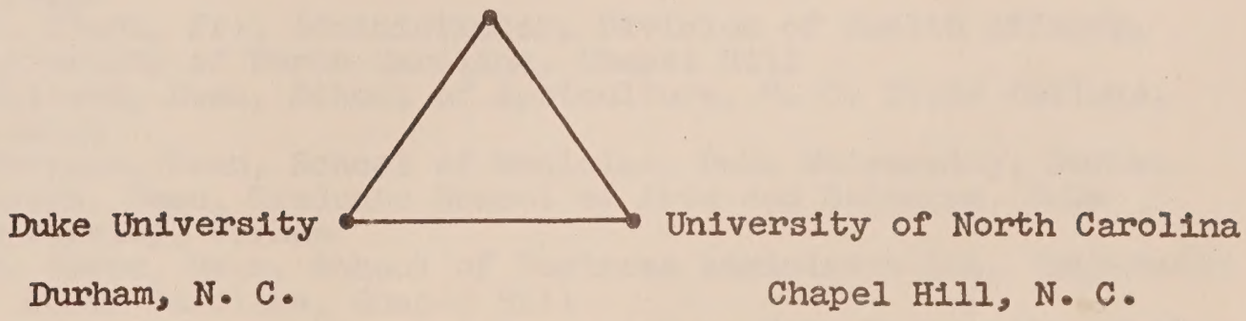
DECEMBER 1955

INVENTORY OF SELECTED RESOURCES

OF

THE RESEARCH TRIANGLE

North Carolina State College
Raleigh, N. C.



December 1955

Governor's Research Triangle Development Council

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PREFACE

This report is not intended to represent a complete and well integrated summary of all or even most of the resources of the Research Triangle Area. It is an attempt to furnish essential information concerning the general cultural facilities of the three cities of the Research Triangle and to give in brief form somewhat detailed information as to selected research resources available at the three Triangle institutions, namely, Duke University at Durham, North Carolina State College at Raleigh, and the University of North Carolina at Chapel Hill.

It is well recognized by all who have worked in the preparation of this Inventory and the others associated with Governor Hodges' Research Triangle Development Council that only a segment of the resources of North Carolina is represented. There are, of course, many large scale industrial plants and research laboratories as well as other educational institutions in the State whose reputation may be as widespread and respected as any of the educational institutions with which this report concerns itself.

There is, however, a uniqueness associated with the potential of the Research Triangle institutions and their proximity which seemed to warrant singling out this particular area as one for intensified study. Presentation of information resulting from this study should allow one to assess readily the character and potential of the area for research minded industry or for special research facilities. With this in mind, the following report has been prepared from information submitted by individuals in the three cities on local cultural resources and by collection of data submitted by individuals of the three institutions involved.

The report consists of three main sections, the first being an Introduction and Summary Statement. The second section is titled "The Cultural Resources of the Research Triangle Cities." The third section is a somewhat detailed listing of resources--assumed to be of most direct interest to research minded industry and other research organizations. These include staff personnel in selected fields of knowledge, their special competence and fields of present activity, along with information concerning library facilities, student enrollments, special facilities and equipment, and present sources of outside support. Since the third section has involved listing by fields of knowledge rather than by particular schools, institutes, etc., there is included in this section a listing of organized schools, institutes, or other bodies within the several institutions.

Lack of uniformity in the extent of descriptive detail furnished by various departments and schools arises largely from the short time in which the report was assembled. The report was not resubmitted to the individual contributing sources for editing. The Inventory Subcommittee felt that the very considerable delay

which would be occasioned by resubmission of the assembled report would delay unduly the activities of the Research Triangle Development Council.

The Subcommittee wishes to thank Mrs. Doris Copeland Parrish for her careful and diligent work in assembling the information for the Inventory, for making excellent copy for reproduction and for many useful suggestions concerning organization of the material. Her cheerful cooperation has been a major asset in the work of the Subcommittee.

Subcommittee on Inventory

D. W. Colvard
W. C. Davison
R. J. M. Hobbs
M. E. Hobbs, Chairman

November 15, 1955

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I. INTRODUCTION AND SUMMARY

Research and technical developments are playing an increasingly important role in social and economic welfare throughout the world. It has been dramatically demonstrated that increased productivity, arising from new knowledge and new research discoveries, is so powerful a force in our economy as to offset in a large measure fears of depletion of resources such as fuels and pressure of population upon food resources of the world. The needs for research and development are becoming so widely recognized in the United States that practically every industry and governmental agency, including the armed services, are expending considerable sums of money for research talent, facilities, and equipment, and are finding these expenditures a worthwhile investment.

Effective research requires well-trained and imaginative minds operating in an environment that is conducive to objective inquiry and that provides access to research findings of other scientists in various parts of the world.

In the vicinity of Chapel Hill, Durham, and Raleigh, North Carolina, there exists an unusual concentration of research talent and resources. Three university campuses: namely, Duke University at Durham, North Carolina State College at Raleigh, and the University of North Carolina at Chapel Hill, are engaged in a diversity of research found at few other locations in so restricted an area. These three campuses, located in a triangle, each side of which would represent approximately 20 miles in distance, provide the home for two medical schools, a school of dentistry, two engineering schools, two schools of forestry, a school of textiles, a school of agriculture including an Agriculture Experiment Station, a school of public health, a school of business administration, an institute of experimental statistics in which are located the world's highest concentration of professional research statisticians, an institute of government, and a number of other specialized or professional schools and institutes. In this small area are located three outstanding libraries containing more than two million volumes and scientific journals covering almost every field of research. Professional staff and research specialists in selected fields in these three institutions total more than eight hundred fifty and represent talents and research activity in the many fields of inquiry. These fields cover areas of interest to industrial research from antibiotics to heavy industrial engineering and include chemistry, nuclear physics, and a wide variety of agricultural and biological areas. Schools of business administration and law add further to an environment conducive to the location of industrial research activities. Many of the research departments are performing valuable services to industry and government through contract research.

At few locations in the United States, and indeed in the world, can there be found an area so favorable for a research seminar

atmosphere and so accessible to advisory talents, instruments, and devices for performing effectively in the field of research.

The Triangle and surrounding area provides a unique cultural environment. In addition to the specialization in scientific and engineering research and training, there are several liberal arts colleges, good high school facilities and a variety of recreational and cultural offerings. Airline, railroad, and highway transportation merge at this intermediate point between the North and the South. Commuting between the Triangle cities is a matter of thirty minutes and from suburban to downtown areas and shopping centers, the order of ten to fifteen minutes.

Many large industrial firms have already established research laboratories in this general area. More than 50 per cent of the tobacco manufacturing in the United States is performed in the Triangle or within a radius of one hundred miles from it and at least four of the larger companies have research laboratories in the area readily accessible to the Research Triangle.

The three institutions provide an unusual source of trained personnel for research activities and possess the potential of providing adequately both at the professional and technical levels. Within less than one hundred miles from this Triangle is located an additional medical school and research center, namely, The Bowman Gray Medical School at Winston-Salem, North Carolina. In 1956 Wake Forest College will also be located in Winston-Salem, having moved there from Wake Forest, North Carolina.

The three universities located within the Triangle, and officials in the State Government of North Carolina, stand ready to assist research personnel and research facilities in locating in the area and invite a sharing in expansion and sound growth of industrial research activities in ways that are beneficial to all concerned.

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The Triangle and surrounding area provides a unique cultural environment. In addition to the specialization in scientific and engineering research and training, there are several liberal arts colleges, good high school facilities and a variety of recreational and cultural offerings. Climate, rainfall, and topology bespeak perfection merge at this intermediate point between the North and the South. Commuting between the Triangle affords in a matter of thirty minutes and from ninety-ten to southern areas and shopping centers, the order of ten to fifteen minutes.

Many large industrial firms have already established research laboratories in this general area. More than 50 per cent of the research scientists in the United States is performed in the Triangle or within a radius of one hundred miles from it and at least four of the larger accounts have research laboratories in the area readily accessible to the Research Triangle.

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The three universities located within the Triangle, and officials in the State Government of North Carolina, stand ready to assist research personnel and research facilities in locating in the area and invite a showing in expansion and novel growth of industrial research activities in ways that are beneficial to all concerned.

II. THE CULTURAL RESOURCES

OF THE

RESEARCH TRIANGLE CITIES

Chapel Hill

Durham

Raleigh

CHAPEL HILL

It may be said that there are no three cities in the entire state that contain greater cultural advantages than do Chapel Hill, Durham, and Raleigh. Situated in the healthful Piedmont area of the state in relative proximity to each other they furnish attractive facilities for residence of professional people.

In Chapel Hill are found congregations of all the principal churches. Much emphasis is placed on religious activities in the village, if it may still be called such. Courses in religion given by that department of the University of North Carolina are open to adults on an auditing basis. Some of the courses are well patronized by other than regular students.

The Y.M.C.A. and Y.W.C.A. bring outstanding religious leaders to the campus yearly. Addresses by such persons are open to the public. The McNair Lectures, a notable series endowed by the late John C. McNair, are given on alternate years. Such lectures are devoted to science and religion.

Various church groups add substantially to the religious life of the community.

Educationally Chapel Hill ranks high as a place to live. A large university in a small town carries with it distinct advantages from a residential standpoint. The student population is in excess of 6500 while the population of the town is about 5500. Virtually the whole purpose of the community is education. There does not now and never has existed industrial operations of consequence within the city. Such factors accentuate the dominant purpose and objective of the place.

A large modern library has much to offer to those who wish to use its facilities. Residents of Chapel Hill can take advantage of its extensive collection of books, papers, and periodicals.

Conferences of an educational nature are almost in continual session in some branch of the University. To such meetings the public is welcome. A significant instrument of education is U.N.C.T.V., a television station on Channel 4 which is devoted to programs of an educational nature. The programs come from N. C. State College in Raleigh, the Woman's College in Greensboro, and the University of North Carolina at Chapel Hill. The programs cover a wide area and are without the usual commercial features.

The Carolina Political Union, a student organization, yearly brings many outstanding political figures to the campus. The Weil Lectures on Citizenship, an annual series, is a very important contribution to the educational life of the community. The University brings many other distinguished speakers to the campus each year.

Members of the University faculty give frequent popular lectures on various topics in the fields of literature, art and music. These are open to anyone who wishes to attend them.

It should be said that the elementary and high schools of Chapel Hill are regarded as being very good. There are two elementary and two high schools.

For persons with literary tastes, Chapel Hill has been for a number of years a center for those whose interests fall in that field. A dozen or more active novelists and short story writers make their homes here. Quite a number of persons living in the village have engaged in play-writing and play-production through The Playmakers, a well-known organization established many years ago. "The Lost Colony," "The Common Glory," "Unto These Hills," "Horn in the West," "The Wilderness Trail," produced at Berea, Kentucky, and "Faith of Our Fathers," produced at Washington, D. C., were written in Chapel Hill or by University men.

The University of North Carolina Press has attained an enviable record in the publication of many significant volumes.

"The Chapel Hill Weekly" and "The Chapel Hill News Leader," both bi-weeklies, keep the local public well informed on matters of local importance.

Of great significance to all prospective citizens of Chapel Hill is the 400 bed teaching hospital operated in connection with the University Medical School. The hospital is, of course, open to all who wish to patronize it.

A great deal of scientific work goes on in the various departments of the University which would be of interest to like-minded scientists. The Elisha Mitchell Scientific Society is one of the oldest scientific groups in the South. An instrument of much popular scientific interest is the Morehead Planetarium, visited by thousands of school children and many other persons each year. In the basement of the Morehead Building are mounted some of the first astronomical instruments to come to this country.

The fact that the University of North Carolina is the oldest state university in the United States is an item that might stir the historical proclivities of prospective future citizens in learning about the origin and growth of the institution. Several volumes have been written about the University--the most recent one, "A History of the Campus of the First State University," by Archibald Henderson.

For those having an interest in art, an avenue for the expression of such interests is found on the campus. In Person Hall, the home of the Art Department, are shown numerous exhibits of artistic productions in a gallery open to the public. Many of the exhibits--especially those of modern works--are changed

frequently. The rotunda of the Morehead Building contains many paintings by distinguished artists. Within two years the Ackland Art Gallery will be in use. This building is to be erected through the generosity of the late William Hayes Ackland and will house the Ackland collection.

Many events take place during the year which appeal to lovers of music. The University Department of Music provides programs open to the public as a yearly feature of its work. The Chapel Hill Concert Series and The Chapel Hill Choral Club fall into this category. Between the principal concerts are scheduled lesser recitals, providing something for music lovers to attend nearly every week. Chapel Hill is the home of the North Carolina Symphony Orchestra. The Carolina Folk Festival is a feature of each summer school. In addition to student recitals, Graham Memorial Hall provides a series of musical programs each year.

Those whose interests lie along social and civic lines will find much in Chapel Hill to stir their enthusiasm. Various clubs exist which meet such demands. The Faculty Club is not exclusively limited to faculty members. Persons who have been associated with the teaching profession are received into membership. Rotary, Kiwanis, and Lions each have flourishing organizations. A vigorous Junior Chamber of Commerce has done outstanding work for the community.

The recreational facilities of Chapel Hill are quite extensive. The yearly round of sports events adds much life and color to the community. Football, baseball, basketball, track and tennis provide an almost continuous program for sports lovers. The Chapel Hill Country Club and Golf Course are open to citizens of the town. While the Finley Golf Course belongs to the University, it is open to outsiders who wish to make use of its facilities. Indoor and outdoor swimming pools are patronized by children and others upon the payment of moderate fees. The student entertainment series is open to outsiders after student demands are filled. Mention may be made of two moving picture theaters which bring to the community the latest and best film productions.

The Playmakers present for the community a full program of classic and modern dramatic and musical works, both indoors and outdoors in their Forest Theater. The yearly series not only furnishes entertainment for spectators but gives opportunity for specially interested and competent members of the community to take part.

Every season major instrumentalists, singers from the Metropolitan Opera Company, and other nationally and internationally prominent artists in the entertainment world, come to the campus.

While the foregoing is by no means a complete statement of the various cultural resources of Chapel Hill, it does mention the main features that characterize life in the village.

DURHAM

The City of Durham is unique among the Triangle Cities in that it is the youngest in point of age yet the largest in point of size. The city was first known as Durhamville and took its name from Dr. Bartlett Durham, a physician living on the newly built railroad running from Raleigh to Greensboro. Dr. Durham had given the railway four acres of land for a station. Later the place was called Durham Station, then Durham's, and finally Durham. From its earliest beginning the city has been associated with the manufacture of tobacco. An interesting incident is related concerning the spread of the demand for manufactured tobacco. After the surrender of General Johnson to General Sherman, soldiers of both armies met at Durham Station. The war was over and free intermingling of Northern and Southern soldiers took place. Not far distant from the station, John Green had a supply of manufactured tobacco stored in a frame building. The house was sacked by the soldiers who carried away in their pockets the entire contents of the building. Northern soldiers went North, Southern soldiers went West and South. With them went the tobacco. When the supplies were exhausted, letters began coming to the postmaster, the railway agent and others at Durham Station inquiring where they could purchase further supplies of the "Celestial Weed." Mr. Green, rendered almost bankrupt by the raid of the soldiers, quickly realized his opportunity and began the manufacture of Durham Smoking Tobacco to supply the increasing demand. He adopted the name of Bull Durham as his trade-mark. His success was assured.

The population of the town increased rapidly and in 1869 the city was incorporated. A few years later, Durham County was created from Orange and Wake Counties. The growth of a thriving American city followed rapidly.

Municipal development brought with it the cultural activities which strongly characterize the city today. Such activities may be described as pertaining to the religious life of the people, their educational institutions, their literary, artistic and musical attainments, their social and civic organizations, and finally their recreational advantages.

The religious life of the community is well served by a large number of churches including those of all denominations found in this area. It is said that the oldest institution established in this area was a church--the Rose of Sharon Baptist Church established in 1845. Local Y.M.C.A.'s and Y.W.C.A.'s are well patronized furnishing as they do strong support for the religious and moral life of their members. Outstanding in the whole area are the regular services held in Duke Chapel. Visiting preachers representing many faiths make a regular part of such services.

The educational institutions of the city are well known. Duke University, established in 1924, is one of the great universities of the nation. With an endowment of twenty million dollars plus an

annual income from the Duke Endowment, a library of more than one million volumes, a faculty of more than 650, and a student body of 5,100, it provides professional courses of a high order in divinity, law, medicine, engineering, nursing, and forestry, as well as the usual undergraduate courses in liberal arts including music, education, art, economics, and business administration.

The North Carolina College for Negroes, a state institution, has courses in arts and sciences, law, public health education, and public health nursing. The total enrollment is 1,514.

There are two commercial schools, one parochial, and two nursery schools. The city has adequate elementary and high schools. The total school enrollment in elementary and high schools is more than 10,000.

Literary activities of the people naturally center around the faculty of Duke University. Frances Gray Patton, the author of Good Morning, Miss Dove, and other volumes, has an established place in contemporary American literature. Helen Bevington and William Blackburn take high rank in this field. The Scribblers Club is mentioned as an avenue of literary expression.

The Duke University Press has produced a series of notable volumes. The Press is particularly well-known in the periodicals field, publishing among others such outstanding magazines as American Literature, The Hispanic American Historical Review, and The South Atlantic Quarterly. It has also published many volumes of local history, particularly concerning the tobacco industry.

Library facilities are always indicative of the culture of a community. Durham takes high rank in this connection. In addition to the library of Duke University, the city has a public library and North Carolina College has a good library. College and downtown book stores supply needs in this respect.

As to newspapers, the city is well supplied in the Durham Herald-Sun morning and afternoon papers. New York City and other papers are easily obtainable at news stands.

Scientific work interesting to scientifically minded citizens is carried on in the Departments of Chemistry, Physics, and Engineering at Duke. Many lectures on such subjects are open to the public.

Allied Arts, Inc., is a cooperative entity embracing such organizations as the Durham Art Guild, the Durham Theatre Guild, the Durham Camera Club, and the North Carolina Symphony. A single membership covers all of these. The Durham Art Guild holds classes for children and adults and sponsors exhibits and lectures.

Art exhibits are also conducted at Duke University and the Duke University Arts Council lends framed reproductions of well-known artists and sponsors outstanding lecturers.

The Duke Concert Series brings to Durham each year such outstanding artists as Heifetz, Curzon, and Bachauer as well as the Robert Shaw Chorale and the Boston Pops Orchestra. Concerts and modern dance recitals are given by the North Carolina College. The Duke Chamber Arts Society sponsors five quartet concerts each year by first class groups.

Indoor and outdoor concerts are given by the Duke Concert Band. Other outstanding musical organizations are the Duke Glee Club, the Duke Madrigal Singers, the Duke String Quartet, the Duke Symphony Orchestra, the Durham Civic Choral Society, and the Duke Music Faculty concerts. Organ recitals are given on Sunday evenings at the Duke Chapel.

There are active groups of various men's civic clubs--Rotary, Kiwanis, Lions, Sertoma, Civitan, Exchange, Toastmasters, American Business and Optimist. For Durham women there are organizations of Altrusa, Pilot, National Secretaries Association, Woman's Club, the Rose Society, and various garden clubs.

Business and professional organizations in Durham are the Chamber of Commerce, the Junior Chamber of Commerce, the Merchants Association, the Business and Professional Women, and the Business and Professional League, among others.

Of prime importance to persons moving into a new community are public health agencies and hospitals. The city of Durham is well cared for in this respect. Its water supply and sanitary facilities are not surpassed by any city in the state. Great care is taken to maintain a plentiful supply of pure water; careful vigilence is maintained to guard the public health in its milk supply and disposal plants. No city in the state is better supplied with hospitals. Watts, the oldest, is highly rated and is now run by Durham County. Duke Hospital, equally well-known, draws patients from many states other than North Carolina. Lincoln Hospital, founded by the Duke family, is maintained for and staffed by Negro citizens.

The recreational facilities of the city supply almost any form of recreation that the residents may wish. The most widely used, perhaps, are the moving picture theatres. For those inclined to take part in various theatrical productions, there is the Durham Theatre Guild which draws on town and college people for excellent productions under the professional direction of Jane Barry Haynes. Several former professional actors now living in Durham participate in these plays. The Duke Players, a long established dramatic club, produces a number of plays each year. Annual musical productions are given each year by Hoof 'n Horn, a Duke group.

Several excellent golf courses provide the opportunity for participation in that sport. The sports program of Duke doubtless provides the greatest recreational program from the spectators standpoint--football, basketball, tennis, and track. There are also civic baseball, softball, and bowling leagues. Two radio stations constantly carry various programs of interest to listeners. T.V. programs from Durham, Raleigh, Greensboro, Chapel Hill, and others come in with satisfying performance.

RALEIGH

CAPITAL OF NORTH CAROLINA

The City of Raleigh, known as the City of Oaks, has the unique distinction among the forty-eight capitals as having been planned and established on land bought by the State as a location for its seat of government.

Wake County, bearing the maiden name of Royal Governor Tryon's wife, was created in 1771. The first capitol, constructed of brick made on the lot corner of Harget and Harrington Streets where the City of Raleigh now stands, was first occupied by the General Assembly in the fall of 1794.

From over the State the families of men who were serving the government moved in, as did a number of the stable old families of the county. These first inhabitants set a high standard for their new home in every way. They built beautiful if not always palatial homes, and every since Raleigh has been known as a city of lovely homes and gardens. Their business houses were modest but substantial, fore-runners of the imposing bank, insurance, and office buildings of the city today. They set the pattern for their city to become a cultural and religious one. They built a school and started churches.

The first capitol building, in the center of the square, burned in 1831. With it went the $10,000 marble statue by Canova of George Washington reputed to have been at that time the most expensive work of art in the United States. The remains of the statue and a cast from the model, a gift from a King of Italy, are in the Hall of History in Raleigh today. This purchase of a work of art with State funds at a time when the State was poor speaks for the cultural aims of those leaders. Their successors have since followed their example when funds were available, hence a State Art Gallery and a State-aided Symphony Orchestra, and outdoor historical pageants.

The capitol was rebuilt and since 1840 the present structure has stood in impressive simplicity, the most admired and loved building in the whole of North Carolina. Solid and imposing yet of graceful lines in soft stone that reflects the moods of weather and the green of grass, the structure is an excellent example of the Grecian-Doric mode.

The original plan of the capital city, which is largely symmetrical, has been artistically preserved in the city's numerous expansions and developments, including Cameron Park, Boylan Heights, Hayes-Barton, Hazelwood, Anderson Heights, Mordecai, Budleigh, Fairmont and the two recent modern sub-divisions, Longview Gardens, and Cameron Village.

'In the rotunda of the capitol are busts of notable men, and portraits of others hang in the legislative halls, done by world-famous artists. On the beautiful grounds, planted in varieties of native trees, shrubs, and blooming plants, there are statues: Houdon's of Washington, Charles Keck's of the three Presidents North Carolina gave to the nation--Andrew Jackson, Andrew Johnson, and James K. Polk. At either end of a Memorial Hall are Henry Ellicott's statue of Vance and Gutzon Borglum's Aycock. There are statues to the Women of the Confederacy, and the 70 foot shaft to the men of the Confederacy surmounted and flanked with bronze figures of Confederate soldiers.

Facing the Capitol Square are the State's departments' buildings, modern structures of marble and granite that reflect the marvelous growth of the State, especially in the last fifty years. There is the Justice Building housing the Supreme Court, the Agricultural Building with acres of floors where the vast programs for farm expansion are located. The State Museum is housed in a large annex. Established in 1851 it is devoted to the natural history and natural resources of the State. Exhibits cover the geological history of the State with consequent mineral and soil resources, the large variety of plant life, with timber resources, and the varied animal forms from the primitive to the pre-historic American Indian. Early agriculture is depicted by tools and implements.

Also facing the Capitol Square are many buildings which contain various activities of the State government such as the Department of Education and the Department of Archives and History. The Hall of History is a museum containing items dating from the Indians and the Roanoke Colony, works of art, literature, sculpture, manufacture, handicraft, and commerce. It also contains archives and relics of the wars in which North Carolina has participated.

Other buildings facing the Capitol Square include the Revenue Building, the State Library, the City Library, the Y.M.C.A., and four churches. The most notable of these from the standpoint of architecture is Christ Church, designed by Richard Upjohn and erected in 1848-1853. The religious life of the city is well served by seventy-four other churches. The activities of the many churches exercise a significant influence upon the life of the city. The Institute of Religion, sponsored by the United Church, brings prominent national and international figures to Raleigh each year for a five-week period of lectures and conferences.

Not far from the Capitol, on East Morgan Street, is a four-story brick building, formerly the State Highway Building, which is being renovated and made into the home of the North Carolina Museum of Art, which has outgrown its present quarters. Following the pattern set by the early nineteenth century lawmakers, the 1947 general assembly appropriated one million dollars for the purchase of paintings, mainly fifteenth to eighteenth century, representing 8 major schools of western art and including important works by Peter Paul Rubens, Hans Memling, Van Dyke, Rembrandt,

Lochner, Crespi, Bellotto, Boucher, Gainsborough, Raeburn, Romney, Gilbert Stuart, Copley, Moran, Ryder, and others. This collection of 200 paintings has been matched by a collection valued at one million, given by the Samuel H. Kress Foundation.

There is a four year art school in the city. The Art Department of the Raleigh Woman's Club puts on a "Side Walk Art Show" in Cameron Village each year.

The Ceramics Department and the School of Architecture at North Carolina State College have displays of their work annually. The Hobby Club meets frequently in the Pullen Park Recreation Center where classes in art are conducted.

In 1801 an educational academy was established on Burke Square. It was built with state aid and was patronized by the wealthier families of the city. Not until the 1840's was there much agitation for public schools. There are now 17 of these in the city, including a large splendid high school and two junior high schools. The pride of the city is its public schools, in their handsome buildings, with able teaching staffs.

The city has six colleges, the county seven, as Wake Forest College, soon to become a Southern Baptist seminary, is located 17 miles from the city. These colleges have a total average enrollment of 10,000 students. They are Meredith, Peace, St. Mary's, for women; Shaw and St. Augustine, Negro co-educational; Wake Forest (Baptist Seminary) and North Carolina State College of Agriculture and Engineering, a unit of the Greater University of North Carolina. The cultural influence of these colleges in the life of the city is inestimable. Their schools of music, art exhibits, lecture courses, dramatic and other plays and entertainments, open to the public, provide a wealth of entertainment and opportunity for self-education to Raleigh citizens.

The largest of the colleges is the North Carolina State College, with 64 buildings in a tract of 2,199 acres. The plant is valued at $30,000,000. There is a teaching staff of over 560, and the current enrollment is approximately 5,000. It has 48 academic departments in the Schools of Agriculture, Education, Design, Forestry, Engineering, Textiles, and the Summer School. It has an Extension School of 7,000 students, and operates the North Carolina Agricultural Experiment Station and the Agricultural Extension Service. There are night courses in many fields, attended by hundreds of Raleigh men and women. The College brings annually many experts in its various schools and their lectures are open to the public. The College's athletic teams, her famous "Red Coat" Band, orchestra, military parades, and social affairs lend color and interest in the sum of life in Raleigh.

In addition to the two public libraries in Raleigh, the Olivia Raney and the B. H. Harrison, the State College Library with its well-trained staff is willing to help persons whether of

the College faculty, staff, and personnel or not. There are 148,000 books, with specially strong holdings in Technology, Agriculture, Pure Sciences, Genetics, and Nuclear Science. There are 3,000,000 federal government documents, including those of the Department of Agriculture, the Bureau of Mines, the Geological Survey, and the Bureau of Standards. The Library is one of 40 in the United States and Canada permitted to receive all (non-classified) publications of the Atomic Energy Commission and the Canadian Commission. The Library is open 89 hours a week and occupies a beautiful building, one of the largest and most modern in the United States. The Architecture Library in the School of Design has 6,000 volumes on Design, Architecture, Art, many of them costly and beautiful. They may be used by Raleigh citizens with certain limitations. The Textiles Library in the Textiles Building is one of the best in the world on textiles. It has 4,500 volumes.

Dominating the State College campus is The Tower, a 116-foot campanile of white granite, a memorial of alumni to the 33 State College men who died in World War I. The famous William Neal Reynolds Coliseum, the largest building of its kind in the South and the home of the College's great basket-ball teams, accommodates 12,400 at indoor contests, public meetings, ice shows, and dances.

Another important building on the State College campus is the Burlington Laboratory Building which houses the Raleigh Research Reactor, the first privately owned and operated nuclear reactor in the world on a college campus. Near the eastern edge of the campus stands the quaint little house in which the seventeenth President of the United States, Andrew Johnson, was born in 1808. It is furnished in the period of his birth and attracts thousands of tourists and students.

The State Fair Grounds just west of the city of Raleigh occupy 225 acres. In 1955 one-half million persons attended the fair during its five days of operation. The central attraction on the grounds the year round is "one of the most remarkable buildings ever constructed," the Fair Arena. A parabolic design, with a roof supported on cables suspended between 90-foot concrete arches and walls entirely of glass, arching against the sky, it is indeed beautiful beyond description. It received the Gold Medal from the Agricultural League of New York as the "outstanding achievement in engineering in 1952," and the 1953 award of the American Institute of Architects. It was designed by the late Matthew Nowicki, a State College professor in the School of Design. It is used for livestock shows and sales, trade shows, rodeos, circuses, conventions, exhibits, and other entertainments.

For the 80,000 people who live in the corporate limits of Raleigh, and the thousands who come in for entertainment, there is Memorial Auditorium, seating 5,000, where the Civic Music Association presents annually great musicians and symphony orchestras. Famous jazz bands appear, political conventions are held, Governors are inaugurated, the Debutante Ball annually takes place, and sports events are seen.

The State Theatre is both a stage theatre and a moving-picture one, among the dozen or so in the city. There is the beautiful Raleigh Little Theatre, seating 800, with its outdoor arena and acres of rose gardens. Here are presented almost continuously as nearly professional performances by amateurs as can be seen anywhere. The Childrens' Little Theatre is soon to be built nearby.

The Grass Roots Opera Company, founded by A. J. Fletcher in 1948, has grown from a purely local opera production company into a nationally known organization utilizing the talents of the finest young artists in the country.

There are two large country clubs and four excellent golf courses in or near Raleigh; 15 public parks; three radio stations; one television station; five hospitals; six major hotels; and two daily newspapers. There are 50 book clubs, the largest woman's club in the South, a large Junior League, a League of Women Voters, approximately 25 men's civic clubs, patriotic and fraternal organizations, a Y.M.C.A. and a Y.W.C.A. and the headquarters of many state-wide organizations and societies. There is a Parent-Teachers Association for each school.

For shoppers there is the largest shopping center of its kind in the South, Cameron Village, located on what was formerly a 158-acre tract of wooded land lying in the heart of one of Raleigh's residential sections. Every type of store is there and the parking space unlimited. (There are 90 private homes and apartment houses containing 560 units in the area.) In 1948 the apartment project won first prize in the National Association of Home Builders' contest for "ingenuity, originality, and soundness of design and construction, and suitability of the project to its location." This ideal "city within a city" is the home of many retired people and offers most attractive living conditions for persons who wish to write, paint, or simply enjoy existing.

Annually in December the State Literary and Historical Society, the State Art Society, the State Folklore Society, and the Society for the Preservation of Antiquities hold their meetings. The week has come to be designated "Cultural Societies Week." At that time the Mayflower Cup is awarded to the North Carolina author of the best literary work of a non-fiction nature. The O'Henry Award is presented at the same time to the outstanding author of fiction. Judged by the opportunities for cultural advancement offered, it is appropriate that the city of Raleigh should be honored as the meeting place for these distinguished and useful organizations.

III. SELECTED RESOURCES OF INSTITUTIONS IN THE RESEARCH TRIANGLE

This section of the Inventory is somewhat lengthy and for this reason a brief outline of the arrangement of the section is given below following which the main body of the section begins.

Outline of Arrangement for Section III

A. RESOURCES IN SELECTED FIELDS OF KNOWLEDGE

FIELD

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
	a. . . . . .([1])			
	b.			
	c.			
N. C. State				
	a.			
	b.			
	c.			
U. N. C.				
	a.			
	b.			
	c.			

2. Library Resources.

Duke

N. C. State

U. N. C.

3. Special Facilities and Equipment.

Duke

N. C. State

U. N. C.

[1] If a staff member is associated with a particular school, the school is indicated in parenthesis.

4. Major Areas of Present Research Activity.

Duke

N. C. State

U. N. C.

B. STUDENTS

Institution	Field	Degrees Awarded 1954-1955			Majors in Course September 1955	
		Bachelors	Masters	Doctors	Bachelors	Graduates
Duke						
N. C. State						
U. N. C.						

C. SCHOOLS, INSTITUTES, AND SPECIALIZED GROUPS WITHIN INSTITUTION

Duke

N. C. State

U. N. C.

D. SOURCES OF OUTSIDE SUPPORT AND COOPERATIVE PROGRAMS

Duke

N. C. State

U. N. C.

E. GENERAL LIBRARY RESOURCES

Duke

N. C. State

U. N. C.

4. Major Areas of Present Research Activity.

Duke

N. C. State

U. N. C.

5. STUDENTS

Institution	Field	Degrees Awarded 1954-1955				Majors in Course September 1955
		Bachelors	Masters	Doctors	Professors	Graduates
Duke						
N. C. State						
U. N. C.						

6. SCHOOLS, INSTITUTES, AND SPECIALIZED GROUPS WITHIN INSTITUTION

Duke

N. C. State

U. N. C.

7. SOURCES OF OUTSIDE SUPPORT AND COOPERATIVE PROGRAMS

Duke

N. C. State

U. N. C.

8. GENERAL LIBRARY RESOURCES

Duke

N. C. State

U. N. C.

III. SELECTED RESOURCES OF INSTITUTIONS IN THE RESEARCH TRIANGLE

A. RESOURCES IN SELECTED FIELDS OF KNOWLEDGE

ANATOMY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Markee, Joseph E. (Med.)	Ph.D.	Professor Chairman of Department	Endocrine Studies, Transplantion Techniques, Muscle Tension Studies, Neurological Techniques, and Production of Sound Motion Pictures.
	b. Agnello, Sam. A. (Med.)	A.B.	Technical Instructor	Neurological and Histological Methods.
	c. Baylin, George J. (Med.)	M.D.	Professor of Radiology and Associate in Anatomy	Radiological Techniques.
	d. Becker, Roland F. (Med.)	Ph.D.	Associate Professor	Animal Behavior Techniques, Neonatal Asphixia Studies and Neurological Methods.
	e. Christian, Donald H. (Med.)	Ph.D.	Instructor	Neurological and Endocrine Methods.
	f. Duke, Kenneth L. (Med.)	Ph.D.	Associate Professor	Comparative Histology and Histochemical Methods.

III. SELECTED RESOURCES OF INSTITUTIONS IN THE RESEARCH TRIANGLE

A. RESOURCES IN SELECTED FIELDS OF KNOWLEDGE

ANATOMY

I. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Scientific Interests
Duke	Beckes, Joseph S. (Med.)	Ph.D.	Professor Chairman of Department	Endocrine Glands, Tissue-Culture Techniques, Chemical Structure, Histological Techniques and Production of Bone Tissue Fracture.
Duke	Kornfeld, Sam R. (Med.)	A.B.	Technical Instructor	Anatomic Heart and Histological Methods.
Duke	Taylor, George L. (Med.)	Ph.D.	Professor of Pathology and Associate in Anatomy	Histological Techniques.
Duke	Becker, Roland F. (Med.)	Ph.D.	Associate Professor	Metabolic Behavior Tech-niques, Neonatal Physiologic Studies and Neurological Methods.
Duke	Chalkley, Lucile M. (Med.)	Ph.D.	Instructor	Histological and Histochemical Methods.
Duke	Duke, Kenneth M. (Med.)	M.D.	Associate Professor	Comparative Neurology

III-A cont. (Anatomy)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
	g. Everett, John W. (Med.)	Ph.D.	Professor	Endocrine and Reproductive Studies and Histochemical Methods.
	h. Grunt, Jerome A. (Med.)	Ph.D.	Instructor	Endocrine and Reproductive Studies.
	i. Hetherington, Duncan C. (Med.)	M.D. Ph.D.	Professor	Tissue Culture Methods and Histochemical Methods.
	j. Knisely, William H. (Med.)	Ph.D.	Instructor	Methods for Visualization of Circulating Blood.
	k. Peele, Talmage L. (Med.)	M.D.	Associate Professor	Experimental and Clinical Neurological Studies.
U. N. C.	a. Berkowitz, E. C. (Med.)	Ph.D.	Instructor	Neurophysiology.
	b. Dossel, W. E. (Med.)	Ph.D.	Instructor	Experimental Embryology.
	c. Fowler, Ira (Med.)	Ph.D.	Assistant Professor	Experimental Embryology.
	d. George, W. C. (Med.)	Ph.D.	Professor	Comparative Hemotology.
	e. Green, J. A. (Med.)	Ph.D.	Assistant Professor	Endocrinology and Reproduction, Ageing, Experimental Carcinogenesis.
	f. Hooker, C. W. (Med.)	Ph.D.	Professor	Endocrinology and Reproduction, Ageing, Experimental Carcinogenesis.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	g. Kaylor, C. T. (Med.)	Ph.D.	Associate Professor	Radioisotopes.
	h. Van Cleave, C. D. (Med.)	Ph.D.	Associate Professor	Radioisotopes.
	i. Vaughn, P. P. (Med.)	Ph.D.	Instructor	Comparative Anatomy.

2. Library Resources.

Duke

The Anatomy Department has no separate library but periodical and reference sources are complete for all but extraordinary requirements for research in anatomical fields in the excellent library of the Duke Medical School.

U. N. C.

See statement on Division of Health Affairs in "General Library Resources" for the University of North Carolina.

3. Special Facilities and Equipment.

Duke

Special facilities include equipment for the production and duplication of various kinds of motion pictures including time lapse, animation, and radiological; a small but well equipped tissue culture unit including a number of rooms; a unit for recording muscle tension and compression; four laboratories equipped for most of the histochemical techniques; a unit for sterotactically placing lessions or electrodes in various experimental animals; a room specially equipped for observation of circulating blood; facilities for various kinds of transplantation techniques, and access to facilities for radiographic photography.

Special equipment: for the production and editing of sound motion pictures, and for the duplication of silent motion pictures and the production of new master prints, electronic amphifyer for cinefluorograph, special equipment tissue cultures including ovens and glass washing equipment, research microscopes of various types, special stimulators for controlled electrical stimulation of the brain, sterotactic apparatus

Duke for accurately placing electrodes in the brain, amphyfiers and recording apparatus for electrically recording activity from the brain, some special equipment for the study of the response of animals to odors, apparatus for the direct observation of circulating blood, tension apparatus for recording muscle tension and tensile strength.

U. N. C.

Special equipment: electronic equipment for neurophysiologic work, including dual beam oscilloscope, stimulators, kymographic camera, etc.; equipment for certain studies involving radioisotopes; equipment for preparation of tissues for microscopic study; Warburg tissue respiration apparatus; equipment for chemical studies including Beckman DU Spectrophotometer with accessories for ultraviolet studies, photoelectric colorimeter, polarograph, etc.; equipment for studies in experimental embryology; and optical equipment, including a phase-contrast microscope.

4. Major Areas of Present Research Activity.

Duke

a. Growth of cells and tissues including tumors in transplants in tissue culture.
b. Factors which influence the reproductive cycle.
c. Neurological studies including the relation of the nervous system to ovulation.
d. Behavioral response of animals to odors.
e. Olfactory thresholds.
f. Cardiovascular studies, particularily the flow of blood through small vessels.
g. Senescence studies particularly in relation to circulation.
h. Morphological changes during aging.
i. Tension created by muscles.
j. Relation of muscle groups to motion.
k. Rate of turnover of collegen.
l. Effect of changed functional demands on scar tissue.
m. Functional anatomy of the hand.
n. Functional anatomy of the back.
o. Functional anatomy of the feet with especial emphasis on the support of the arches.
p. Method of action of certain blocking agents (drugs) on endocrine and nervous activity.
q. Factors which influence the response of the end organs to endocrines.
r. The factors which influence uterine activity and labor.
s. Uterine bleeding.

U. N. C.

a. Influence of the neural tube on the development of the vertebral column.

U. N. C.

b. Factors influencing the development of the thyroid gland.
c. Localization of radioactive calcium and strontium in the body.
d. Cortical oculomotor fields and their connections in the brain stem.
e. Morphologic aspects of the secretion of ovarian hormones.
f. Factors in the genesis of ovarian tumors.
g. Etiology of experimental tumors of the testis.
h. The identity of the circulating luteal hormone.
i. Spontaneous masculinization and its effect upon the incidence of mammary tumors.

ANIMAL PATHOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
a.	Osborne, John Clark (Agr.)	D.V.M.	Professor Head of Department	Veterinary Science.
b.	Barber, Clifford W. (Agr.)	Ph.D. D.V.M.	Professor	Poultry Pathology.
c.	Bell, Rurel Roger (Agr.)	D.V.M.	Assistant Professor	Parasitology.
d.	Grinnells, C. D. (Agr.)	D.V.M.	Professor	Dairy Pathology.

2. Library Resources.

N. C. State

See statement in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

Special facilities include modern animal disease and diagnostic facilities for food producing animals, including histopathology laboratory, pathogenic bacteriology and virology laboratory and complete necropsy laboratory.

Special equipment includes eleven air-lock entrance isolation units, and small x-ray machines.

4. Major Areas of Present Research Activity.

N. C. State

a. Reproductive diseases and disturbances of cattle, sheep, and swine.
b. Internal parasites of cattle and swine.

BACTERIOLOGY AND IMMUNOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
a.	MacPherson, D. A. (Med.)	Ph.D.	Professor of Bacteriology, Head of Department	Pathogenic Bacteriology.
b.	Cromartie, William J. (Med.)	M.D.	Associate Professor	Clinical Bacteriology.
c.	Manire, G. P. (Med.)	Ph.D.	Associate Professor	Virology.
d.	Schwab, John H. (Med.)	Ph.D.	Assistant Professor	Immunology.

4.	Compute torque M (lbf)	M.D.	Vectorial Electrical	Instruments
5.	Compute C, E	(lbf)	M.D.	Vectorial Electrical	Aerospace
6.	Determine Altitude I	(lbf)	M.D.	Vectorial Electrical	Different Instruments
7.	Determine D, V	(lbf)	M.D.	Electrical or Electronic	Aerospace Environments

I. M. D.

Instruments	Basic Energy	Energy Source Affects	Energy	Effect Conditions

7. Data Analysis

Calculations for Answer Sum

8. Internal Calculations of Output and Value.
9. Geographical Direction and Displacement of Output Speed and Angle.

II. G. Data

4. Motor Value of Electric Energy Voltage.

Results:
Energy Conversion Methods Algebra Air-Lock Cumulus Position Angle and Equal X-Ray

Airport Equipment and Engines Electrical Instruments.
Displacement Angle Speed Propulsion Instruments Instruments Measurements and
Energy Conversion Energy Angle Angle Direction and Displacement Amplifier and Load

III. G. Data

3. Energy Amplifier and Generator.

III-V Sum (Energy Energies)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	e. Straughn, W. R. (Med.)	M.S.	Assistant Professor	Bacterial Physiology.
	f. Widra, Abraham (Med.)	Ph.D.	Instructor	Medical Mycology.

2. Library Resources.

U. N. C.

See statement on Division of Health Affairs in "General Library Resources" for the University of North Carolina.

3. Special Facilities and Equipment.

U. N. C.

In addition to the usual equipment found in bacteriological laboratories, the department has ultra-centrifuge, refrigerated centrifuges, sonic oscillator, Warburg apparatus, spectrophotometer, freeze-drying equipment, phase microscope, sterile cubicle and special transfer hoods.

4. Major Areas of Present Research Activity.

U. N. C.

a. Role of the phospho-lipids of Mycobacterium tuberculosis in antigenicity and virulence.
b. A study of the factors involved in the observed increase in the incidence of fungus infection following antibiotic therapy.
c. Investigation of previously unreported toxic metabolites of group A streptococci.
d. A study of streptococcal hemolysins.
e. Studies on the nature of the toxic components of psittacosis viruses and their role in the pathogenesis of this disease.

BACTERIOLOGY AND MICROBIOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	a. Borg, Alfred F. (Agr.)	Ph.D.	Associate Professor	Bacteriology.
	b. Dearstyne, R. S. (Agr.)	M.S.	Professor	Poultry Bacteriology.
	c. Etchells, J. L. (Agr.)	Ph.D.	Professor	Brine Fermentation Bacteriology.
	d. Speck, Marvin L. (Agr.)	Ph.D.	Professor	Dairy Bacteriology.

2. Library Resources.

N. C. State

See statement in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

Special facilities: A bacteriology laboratory for culture and identification of micro-organisms.

Special equipment: Sterilizer, autoclaves, constant temperature room and microscopic equipment.

4. Major Areas of Present Research Activity.

N. C. State

a. Slime molds in soils.
b. Rumen flora and fauna.
c. Physiology of Vibrio fetus.
d. Effects of microflora on food preservation.

SCIENCE, CITY AND INDUSTRY.

1. Small Business.

Institution	Staff Member	Degree Held	Position	Special Courses
N. C. State	a. Doig, Alfred P. (Agr.)	Ph.D.	Associate Professor	Bacteriology.
	b. Dearstyne, R. S. (Agr.)	M.S.	Professor	Poultry Bacteriology.
	c. Stendig, J. E. (Agr.)	Ph.D.	Professor	Dairy Fermentation Bacteriology.
	d. Spoon, Harold L. (Agr.)	Ph.D.	Professor	Dairy Bacteriology.

2. Library Resources.

See statement in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

Special Facilities: A bacteriology laboratory for culture and identification of micro-organisms.

Special equipment: Sterilizer, autoclave, constant temperature room and incubator, a phenoscope.

4. Major Areas of Research Research Activity.

5. Other Units in Series.

6. Theses.

7. Publication on Science.

8. Effects of Industries on Food Production.

BIOCHEMISTRY AND NUTRITION

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Handler, Philip (Med.)	Ph.D.	Professor Chairman of Department	Intermediary metabolism, physiological role of vitamins, metabolism of specialized tissues, nutrition, renal hypertension.
	b. Bernheim, Mary L. C. (Med.)	Ph.D.	Associate Professor	Cell respiration, action of drugs on enzymes.
	c. Byrne, William L. (Med.)	Ph.D.	Associate	Nucleotides, nucleic acids chemistry and metabolism.
	d. Deiss, William (Med.)	M.D.	Assistant Professor of Medicine and Biochemistry	Metabolism of connective tissue, thyroid.
	e. Harris, Jerome S. (Med.)	M.D.	Professor of Pediatrics and Associate Professor of Biochemistry	Electrolyte metabolism, renal function, cardiac disease.
	f. Kamin, Henry (Med.)	Ph.D.	Associate	Amino acid metabolism, medical applications of radioisotopes.
	g. Kilgour, Gordon (Med.)	Ph.D.	Instructor	Chemistry of respiratory coenzymes.

BIOCHEMISTRY AND NUTRITION

1. Staff Personnel.

Institution	Staff Member	Degree	Position	Special Correspondence
Duke	a. Hendlee, Philip (Med.)	Ph.D.	Professor Chairman of Department	Intermediary metabolism, physiological role of vitamins, metabolism of specialized tissues, nutrition, renal hypertension.
	b. Bernheim, Mary L. C. (Med.)	Ph.D.	Associate Professor	Cell respiration, action of drugs on enzymes.
	c. Byrne, William L. (Med.)	Ph.D.	Associate	Nucleotides, nucleic acids chemistry and metabolism.
	d. Deiss, William (Med.)	M.D.	Assistant Professor of Medicine and Biochemistry	Metabolism of connective tissue, thyroid.
	e. Martin, James G. (Med.)	M.D.	Professor of Pediatrics and Associate Professor of Biochemistry	Alternative metabolism, renal function, cellular disease.
	f. Kanin, Henry (Pho.)	Ph.D.	Associate	Amino acid metabolism, medical applications of radioisotopes.
	g. Kilgore, Gordon (Pho.)	Ph.D.	Instructor	Chemistry of respiratory enzymes.

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	h.	Korkes, Seymour (Med.)	M.D.	Associate Professor	Carbohydrate metabolism, enzymology.
	i.	Lynn, William (Med.)	M.D.	Associate in Medicine and Biochemistry	Lipid chemistry and metabolism.
	j.	Schwert, George W., Jr. (Med.)	Ph.D.	Associate Professor	Physical biochemistry, protein structure, enzyme kinetics.
	k.	Taylor, Haywood (Med.)	Ph.D.	Professor of Toxicology and Associate Professor of Biochemistry	Analytical methods, toxicology.
		BIOCHEMISTRY			
N. C. State	a.	Aurand, Leonard W. (Agr.)	Ph.D.	Associate Professor	Animal Biochemistry.
	b.	Blumer, Thomas N. (Agr.)	Ph.D.	Associate Professor	Animal Biochemistry.
	c.	Dietz, James H. (Agr.)	Ph.D.	Assistant Professor	Food Processing.
	d.	Evans, Harold J. (Agr.)	Ph.D.	Associate Professor	Plant Biochemistry.
	e.	Hall, John L. (Agr.)	M.A.	Research Instructor	Plant Biochemistry.
	f.	Jones, Ivan D. (Agr.)	Ph.D.	Professor	Food Processing.
	g.	Piland, J. R. (Agr.)	M.S.	Associate Professor	Plant Biochemistry.

III-A cont. (Biochemistry and Nutrition)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	h.	Smith, F. H. (Agr.)	M.S.	Associate Professor	Animal Biochemistry.
	i.	Tove, Samuel B. (Agr.)	Ph.D.	Associate Professor	Biochemistry - Animal Science.
	j.	Warren, Frederick G. (Agr.)	Ph.D.	Associate Professor	Dairy Biochemistry.
	k.	Weybrew, J. A. (Agr.)	Ph.D.	Professor	Plant Biochemistry.
	l.	Zuraw, Edward A. (Agr.)	M.S.	Research Instructor	Dairy Biochemistry.
		BIOCHEMISTRY AND NUTRITION			
U. N. C.	a.	Andrews, James C. (Med.)	Ph.D.	Professor Head of Department	Biochemistry of sulfur compounds. Studies on the etiology of calculus formation.
	b.	Anderson, Carl E. (Med.)	Ph.D.	Associate Professor	Phospholipids and their derivatives.
	c.	Berkut, M. K. (Med.)	Ph.D.	Assistant Professor	Fluorine compounds.
	d.	Irvin, J. Logan (Med.)	Ph.D.	Associate Professor	Nucleic acids and nucleo-proteins.
	e.	Wilson, John E. (Med.)	Ph.D.	Assistant Professor	Amino acid metabolism.
	f.	Yarbro, Claude L. (Med.)	Ph.D.	Instructor	Calculus formation, lipid chemistry.

Institution	Staff Member	Highest Earned Degree	Position	Special Curriculum
U. C. Davis	b. Smith, E. H. (Agr.)	M.S.	Associate Professor	Animal Biochemistry.
	i. Tove, Samuel B. (Agr.)	Ph.D.	Associate Professor	Biochemistry - Animal Science.
	j. Watson, Frederick E. (Agr.)	Ph.D.	Associate Professor	Dairy Biochemistry.
	k. Weybrew, J. A. (Agr.)	Ph.D.	Professor	Plant Biochemistry.
	l. Zurow, Edward A. (Agr.)	M.S.	Research Instructor	Dairy Biochemistry.

BIOCHEMISTRY AND NUTRITION

U. S. C.	a. Andrews, James C. (Med.)	Ph.D.	Professor Dean of Department	Biochemistry of sulfur compounds. Studies on the etiology of calculus formation.
	b. Anderson, Carl R. (Med.)	Ph.D.	Associate Professor	Phosphoglycolipids and their derivatives.
	c. Bennett, H. R. (Med.)	Ph.D.	Assistant Professor	Fluorine compounds.
	d. Irvin, J. Logan (Med.)	Ph.D.	Associate Professor	Nucleic acids and nucleo-proteins.
	e. Wilson, John E. (Med.)	Ph.D.	Assistant Professor	Amino acid metabolism.
	f. Yardro, Olinda L. (Med.)	Ph.D.	Instructor	Calculus formation, Lipid chemistry.

III-A cont. (Biochemistry and Nutrition)

2. Library Resources.

Duke

The main library facility is that of the Medical School. The department maintains a 'working' library of the more important reference works and active periodicals with approximately 2500 volumes.

N. C. State

See statement in "General Library Resources" for N. C. State College.

U. N. C.

The Division of Health Affairs Library is located in Memorial Hospital. It has a total of approximately 50,000 volumes and takes over 900 serials currently. It has the only dental collection in the southeastern area and is the only medical library in the southeastern area that makes efforts to keep files on state medical journals. Its collection includes Sociology, Public Health, Sanitary Engineering, Nursing, Pharmacy, and Medicine.

3. Special Facilities and Equipment.

Duke

Facilities include laboratory for tracer studies with stable and radio-isotopes, complete laboratories for isolation of natural products, particularly proteins, animal room, animal surgery, dust-free room for optical measurements.

Special equipment includes recording visible and ultraviolet spectrophotometer, recording polarimeter, manual and automatically operated and recording apparatus for measurement of radioactivity (Geiger, scintillation and gas flow counters), strip counters, mass spectrometer, analytical ultracentrifuge, preparative ultracentrifuge, large research electrophoresis apparatus, light scattering photometer, differential refractometer, polarimeter, refrigerated high speed centrifuges (5), manual Beckman DU spectrophotometers (5), Warburg respiration apparatus (6), paper electrophoresis (4), column chromatography with automatic fraction collectors (4), 3-channel electroencephalograph, shaking incubators (5), and the usual facilities of biochemical laboratories such as pH meters, balances, microbalances, photoelectric colorimeters, etc.

N. C. State

a. Plant Biochemistry

Special facilities: A plant chemistry laboratory equipped for determination of vitamins and mineral nutrients, a laboratory for the study of mineral elements in plant metabolism including plant enzyme systems, a physiology laboratory for the study of biochemical processes including enzyme systems, and a tobacco chemistry laboratory.

Special equipment: Warburg apparatus and refrigerated Warburg apparatus, high speed refrigerated centrifuges (3), visible and ultraviolet spectrophotometers (3) with flame attachments (2), visible and ultraviolet recording spectrophotometer, automatic fraction collectors (2), automatic titrators (2), fluorophotometer, vacuum oven, paper electrophoresis apparatus, paper chromatographic apparatus (2), geiger counter and survey meter, color and color difference meter, tobacco shredder and cigarette making machine, photoelectric area measurer, recording burn test apparatus, and reflectometer for measuring whiteness of tobacco ash.

b. Animal Biochemistry

Special facilities: A biochemistry laboratory for studying animal metabolism including enzyme systems, a lipid laboratory, a microbiological assay laboratory, an endocrinology laboratory and a vegetable and meats microbiology laboratory.

Special equipment: A windowless flow counter for radioisotope analyses, automatic fraction collector, refrigerated centrifuge, Warburg apparatus (2), visible and ultraviolet spectrophotometers (2), chromatographic equipment (3), various extraction columns and a refractometer.

U. N. C.

Special facilities include a laboratory for low level radiochemical work, a dark room for photographic work and for light scattering measurements, a constant temperature room for microbiological assays and enzyme research, a cold room with an inner deep freeze room for special isolations requiring temperatures as low as -15°C, a constant-temperature instrument room, graduate laboratories equipped with special apparatus for organic syntheses as well as the usual biochemical research.

U. N. C.

Special equipment includes photoelectric colorimeters, polariscope, electrophoresis apparatus, refrigerated centrifuge, fraction collector, Beckman spectrophotometers, special apparatus for organic syntheses, apparatus for lyophilization of proteins, photomultiplier, photofluorimeter, VanSlyke manometric apparatus, Tracerlab scaler and interval flowcounter, scaler and Geiger counter with photocounter, flame photometer.

4. Major Areas of Present Research Activity.

Duke

a. Kinetics of proteolytic enzymes.
b. Kinetics of respiratory enzymes.
c. Nature of the hydrogenases of bacteria.
d. Metabolic role of phosphoserine.
e. Nucleotide interconversions (enzymatic).
f. Sodium and potassium metabolism in muscle.
g. Mechanism of uremic anemia.
h. Chemistry of flavin nucleotides.
i. Metabolic role of glutamine.
j. Metabolic effects of dinitrophenols.
k. Chemistry of connective tissue.
l. Basis for renal hypertension.
m. Enzymes of sulfur metabolism.
n. Enzymatic nucleotide synthesis.
o. Pathways of nitrogen metabolism.

N. C. State

a. Physiological changes in meat, milk, vegetables, and certain crops during processing.
b. The role of specific nutrients in certain metabolic processes of plants and animals.

U. N. C.

a. Studies of the conditions, dietary and otherwise, which favor the formation of kidney and bladder stones in human subjects.
b. General investigations of phospholipids from the point of view of both tissue metabolism and synthesis. This investigation has, as one purpose, the understanding of such metabolism under normal conditions and in cardiovascular diseases.

U. N. C.

c. Methods for the fractionation and isolation of proteins and nucleoproteins of the nuclei of normal cells and of cancer cells for the purpose of finding qualitative and quantitative differences. Biosynthesis of nucleoproteins together with a search for inhibitors of such biosynthetic processes in cancer tissue.

d. Investigations of the metabolism of certain amino acids under normal and abnormal conditions.

e. Investigation of the role and mode of action of fluorides in prevention of dental caries.

f. Studies of certain problems of lipid metabolism and of certain phases of the chemistry of the formation of renal calculi.

BIOSTATISTICS

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	a. Cox, David R. (Public Health)	Ph.D.	Visiting Professor	Mathematical statistics, design of experiments.
	b. Gehan, Edmund (Public Health)	M.S.	Instructor	Biostatistics, sampling procedures.
	c. Greenberg, B. C. (Public Health)	Ph.D.	Professor	Biostatistics, design of experiments.
	d. Sarhan, A. E. (Public Health)	Ph.D.	Research Associate	Mathematical statistics.

2. Library Resources.

U. N. C.

In addition to textbooks on biostatistics, complete files of all national publications on vital statistics and population are available. Also, reports from state departments of health on vital statistics are available.

3. Special Facilities and Equipment.

U. N. C.

Special facilities include 4 electric calculating machines, thirty-eight hand operated calculating machines, teaching aids for biostatistics.

4. Major Areas of Present Research Activity.

U. N. C.

a. Poliomyelitis vaccine and its effect upon North Carolinians.
b. Optimal methods for sampling populations to find rheumatic heart disease cases.
c. Study of general practice of medicine in North Carolina.
d. Analysis of data in contingency tables with special reference to data from Atomic Bomb Casualty Commission in Japan.
e. Order statistics and estimation of parameters in truncated distributions.
f. Methods of reducing congestion in hospital queueing.

BOTANY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Oosting, H. J.	Ph.D.	Professor Chairman of Department	Forest ecology.
	b. Anderson, Lewis E.	Ph.D.	Professor	Plant cytology.

III-A cont. (Botany)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	c. Billings, W. D.	Ph.D.	Associate Professor	Physical Microenvironments.
	d. Blomquist, H. L.	Ph.D.	Professor	Taxonomy.
	e. Culberson, William L.	Ph.D.	Instructor	Taxonomy.
	f. Humm, Harold J.	Ph.D.	Associate Professor	Taxonomy.
	g. Johnson, Terry W., Jr.	Ph.D.	Assistant Professor	Mycology.
	h. Kramer, Paul J.	Ph.D.	Professor	Plant Physiology.
	i. Naylor, Aubrey W.	Ph.D.	Associate Professor	Plant Physiology.
	j. Perry, Harold S.	Ph.D.	Associate Professor	Genetics.
	k. Philpott, Jane	Ph.D.	Assistant Professor	Plant anatomy.
N. C. State	a. Ball, Ernest (Agr.)	Ph.D.	Associate Professor	Plant anatomy.
	b. Wilbur, Robert L. (Agr.)	Ph.D.	Assistant Professor	Botany.
U. N. C.	a. Couch, J. N.	Ph.D. Sc.D.	Kenan Professor Chairman of Department	Fungi: aquatic and soil fungi, symbiosis between insects and fungi, fungi parasitic on insects. Actinomycetes.
	b. Adams, J. E.	Ph.D.	Professor	Plant morphology: systematic anatomy and phylogeny of vascular plants. Floral morphology, embryology, phyto-geography.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	c. Bell, C. R.	Ph.D.	Assistant Professor	Cytotaxonomy and plant evolution, natural hybridization in Sarracenia, pollen size in taxonomy.
	d. Goldie-Smith, E. K.	Ph.D.	Research Associate	Aquatic fungi and Actinomycetes.
	e. Greulach, V. A.	Ph.D.	Professor	Plant physiology, plant growth, plant growth inhibitors, photoperiodism.
	f. Koch, W. J.	M.A.	Instructor	Aquatic fungi and algae. Structure and action of motile cells.
	g. Radford, A. E.	Ph.D.	Associate Professor	Taxonomy and ecology of vascular plants, aquatic vascular plants, vegetation of olivine deposits.
	h. Totten, H. R.	Ph.D.	Professor	Taxonomy of higher plants and drug plants, taxonomy and distribution of trees, shrubs and vines of the Southeastern states.
	i. Wyatt, R. L.	Ph.D.	Instructor	Taxonomy of herbaceous plants.

2. Library Resources.

Duke

The Botany Library is combined with the Zoology and Forestry Library and housed in the Biology Building. Joint holdings approximate 55,000 volumes. Periodicals

Duke

and reference sources are outstanding and will meet all but extremely specialized requirements for research in the fields of physiology, ecology, morphology, anatomy, taxonomy, genetics, mycology, cytology, and microbiology.

N. C. State

See statement in "General Library Resources" for N. C. State College.

U. N. C.

The Botany Department Library located in Davie Hall, the botany building, has about 10,000 volumes. Periodical and reference books are fairly adequate for research in fungi, plant morphology, physiology, taxonomy, and ecology. Of particular value is a large set of reprints collected during the past 50 years.

3. Special Facilities and Equipment.

Duke

Special facilities include a laboratory for general bio-chemical studies, a room with controls for temperature and light, facilities for tissue culture work, micro-technique laboratories for the preparation of plant tissues for anatomical and cyto-logical study, constant temperature rooms, laboratory equipped for work with radio-active isotopes, chamber for measurement of plant processes under controlled light and temperature conditions, herbarium of cryptogamic and phanerogamic specimens, totalling 250,000 specimens and greenhouse facilities, including equipment for length of day studies.

Special equipment includes Beckman DU Spectrophotometer with photomultiplier and equipped for work in the ultraviolet and visible regions, refrigerated Warburg gas analysis apparatus, fluorometer, photometer, lyophilization equipment, refrigerated centrifuge adaptable for centrifugation to 25,000 x g., chromatographic equipment, fraction collector equipment for autoradiography, scaler and counter for studies with radioactive metabolites, rotary and sliding microtomes, paraffin ovens, vertical projector for drawing and photographing projected images of microscopic material, air and soil thermographs, rain gages, anemometers, and considerable other meteorologi-cal equipment, infrared gas analyzer, photoelectric device to measure leaf areas, Beckman oxygen analyzer, Warburg apparatus, refractometer, cryoscopic equipment, equipment for electrical measurements of soil moisture, conductivity bridges, galva-nometers, potentiometers, Wiley mill, balances, and laboratory equipment for chemical analyses of plant material, research microscopes with apochromatic lenses, microtessars and photomicrographic equipment.

N. C. State

Special facilities include a laboratory for study of plant anatomy and morphology, including histology and a Herberium with identified specimens of most of the plant species native to the Southeastern United States.

Special equipment includes a photographic laboratory equipped for photomicrography and a controlled temperature room for plant tissue culture.

U. N. C.

Special facilities and equipment include:

a. Herbarium particularly rich in higher fungi and fungi parasitic on trees, and in vascular plants of southeastern states.

b. Coker Arboretum of 5½ acres and some greenhouse facilities, about 116 acres, mostly woodland, set aside for the development of a larger botanical garden, giving opportunity for growing and study of the different species, varieties and forms of woody plants native to the southeastern states. In this area will also be developed a drug garden for the use of classes in pharmacognosy, materia medica and for research.

c. Greenhouse with space for experimental taxonomy of vascular plants, and with automatic short day cabinets and other equipment for studies on photoperiodism.

d. Air-conditioned laboratory for culturing fungi and Actinomycetes; transfer chamber with ultraviolet sterilization; phase microscope, dark field equipment, photomicrographic cameras, large preparations room with autoclaves, and dry sterilizers de Fonbrune Micromanepulator and Forge. Special laboratories for morphology and cytology equipped with research instruments, darkrooms, physiology laboratory and shop.

e. Sliding and rotary microtomes, freezing microtome.

f. Research greenhouse with automatic short-day cabinet, cold chamber with light period controls, other photoperiodic equipment, small workshop, darkroom, 4 laboratory rooms. Incubator, vacuum oven, hygrothermographs, cryoscopic apparatus, spectroscope, Warburg apparatus, chromatocab, and spectrophotometer.

4. Major Areas of Present Research Activity.

Duke

a. Descriptive ecological studies of Coastal plain vegetation, including adaphic factors.
b. Cytotaxonomic studies of mosses.
c. Plant water relations, especially water absorption, absorption of minerals, tree physiology.
d. Flora of North Carolina, especially grasses and sedges.
e. Physical microenvironments in cold deserts; ecotypic evolutionary studies on arctic-alpine species.
f. Economic possibilities of marine algae of the lower Atlantic Coast of the United States, Gulf of Mexico, and West Indies.
g. Biochemical studies on various metabolic compounds, auxin synthesis, growth inhibitors, dormancy, and photosynthesis.
h. Plant breeding program, aimed at developing strains of sweet corn that will yield qualitatively and quantitatively in Southeastern United Stated.
i. Taxonomy of slime molds of N. C.; studies on marine fungi and forest tree diseases.
j. Comparative and experimental anatomical studies of coastal plain and mountain shrub-bog plants.
k. Taxonomy of lichens of North Carolina; monographic and biochemical studies of selected genera of lichens.

N. C. State

a. Anatomical studies, herbarium collection, classification of wild legumes.

U. N. C.

a. Taxonomy of the vascular plants of North Carolina and the Southeastern states. Taxonomy and distribution of drug plants.
b. Ecology and taxonomy of aquatic vascular plants of North Carolina.
c. Anatomy of the mature wood of tropical plant families related to Cornaceae; phylogeny of Umbellales; embryology of several genera. Systematics and evolution of woody plants.
d. Cytotaxonomy of the Umbelliferae; natural hydridization in Sarracenia; pollen size in taxonomy.
e. Effects of maleic hydrazide and related compounds on plant growth. Effects of photoperiod and other factors on heterophylly.

6. Major Areas of Present Research Activity.

Phyta

a. Descriptive ecological studies of coastal plain vegetation, including adaptive factors.
b. Cytotaxonomic studies of mosses.
c. Plant water relations, especially water absorption, absorption of minerals, trans pirations.
d. Flora of North Carolina, especially grasses and sedges.
e. Physical microenvironments in cold desert; ecotypic evolutionary studies on arctic-alpine species.
f. Economic possibilities of marine algae of the Indian Atlantic Coast of the United States, Gulf of Mexico, and West Indies.
g. Biochemical studies on various mesophilic ascomycetes, with emphasis, growth inhibitors, dormancy, and photosynthesis.
h. Plant disease control, plant or leafhopping studies of sweet corn that will yield profitably and quantitatively in Southeastern United States.
i. Chemistry of alpha acids of H. c.; studies on marine fungi and forest tree diseases.
j. Comparative and experimental anatomical studies of coastal plain and mountain shrubs, plants.
k. Taxonomy of lichens of North Carolina; ecological and chemical studies of selected genera of lichens.

b. Zoology

a. Anatomical studies, bacteria collection, classification of wild legumes.

c. Microbiology

a. Taxonomy of the vascular plants of Duval County and the Jacksonville area. Taxonomy and distribution of dune plants.
b. Ecology and taxonomy of aquatic vascular plants of North Carolina.
c. Analysis of the mature wood of tropical plant fossils related to conifers; physiology of industrial mycology of several genera. Chromosome and evolution of woody plants.
d. Cytotaxonomy of the Dodecatheon meadia hybridization in Saxifragaceae; pollen size in taxonomy.
e. Effects of radio isotopic and related compounds on plant growth. Effects of photoperiod and other factors on heterophylly.

U. N. C. f. Taxonomy and morphology of several groups of fungi; taxonomy, morphology and physiology of Actinoplanaceae a new family of Actinomyates. Studies on antibiotic activities of this group in cooperation with Eli Lilly Company. Studies on the struction and action of swimming plant cells.

BUSINESS ADMINISTRATION AND ECONOMICS

1. Staff Personnel.

ECONOMICS

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
	a. Hoover, Calvin B.	Ph.D.	Professor Chairman of Department	Economic and Political Systems, Analysis of Income Distribution.
	b. Bell, Gorden E.	M.B.A. (C.P.A.)	Assistant Professor	Cost Accounting and Auditing, Theoretical Aspects of Cost Allocations.
	c. Black, Martin L.	M.B.A. (C.P.A.)	Professor	Accounting, Economics of Cost Accounting, Accounting of Cooperatives.
	d. Cartter, Allan M.	Ph.D.	Assistant Professor	Income Redistribution, Wage and Market Theory, National Income Analysis, Regional Wage Differentials, Wage, Employment, and Income Models.

III-A cont. (Business Administration and Economics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	e.	deVyver, Frank T.	Ph.D.	Professor	Labor, Personnel Management, Theory and Practice of Collective Bargaining.
	f.	Dewey, Donald J.	M.A.	Assistant Professor	Government and Business, Anti-trust Policy.
	g.	Hanna, Frank A.	Ph.D.	Professor	Statistics, National Income Analysis.
	h.	Humphrey, Don D.	Ph.D.	Professor	International Trade, Business Cycles, the Pricing of Industrial Products.
	i.	Landon, Charles E.	Ph.D.	Professor	Transportation.
	j.	Lemert, Ben F.	Ph.D.	Associate Professor	Economic Geography.
	k.	McKenzie, Lionel W.	M.A.	Associate Professor	Economic Theory, especially requiring the use of Mathematics.
	l.	Ratchford, Benjamin U.	Ph.D.	Professor	Public Finance, Theory of Governmental Expenditures, Resource Allocation in Economic Regions.
	m.	Saville, Lloyd	Ph.D.	Associate Professor	Economics of Consumption.
	n.	Simmons, Edward C.	Ph.D.	Professor	Money and Banking.
	o.	Smith, Robert S.	Ph.D.	Professor	American Business History, Latin-American Economic Development, Spanish and Hispanic Economic History, The History of Spanish Economic Thought.

III-A cont. (Business Administration and Economics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	p.	Spengler, Joseph J.	Ph.D.	Professor	Demography, Developmental Economics.
N. C. State	a.	James, H. B. (Agr.)	Ph.D.	Professor Head of Department	Agriculture Policy.
	b.	Bishop, Charles E. (Agr.)	Ph.D.	Associate Professor	Economic Development.
	c.	Blanton, Leonard F. (Agr.)	M.S.	Instructor	Dairy Economics.
	d.	Coutu, Arthur J. (Agr.)	M.S.	Assistant Professor	Production Economics.
	e.	Freund, Rudolf E. (Agr.)	Ph.D.	Professor	Agriculture Policy.
	f.	Lindsey, Quentin W. (Agr.)	M.A.	Associate Professor	Agriculture Credit.
	g.	Pierce, Walter H. (Agr.)	Ph.D.	Associate Professor	Production Economics.
	h.	Toussaint, William D. (Agr.)	Ph.D.	Assistant Professor	Production Economics.
U. N. C.		BUSINESS ADMINISTRATION AND ECONOMICS			
	a.	Hobbs, Richard J. M.	LL.B.	Professor of Business Law and Dean	Law, Joint Author Case Book on Business Law.
	b.	Ashby, Lowell DeWitt	Ph.D.	Professor of Economics	Income Analysis.

Qualification	Staff Member	Highest Earned Degree	Position	Special Interests
Full	5. Spangler, Joseph A.	Ph.D.	Professor	Demography, Developmental Economics.
X. Co. Staff				
	1. Jones, R. E. (Agr.)	Ph.D.	Professor Head of Department	Agriculture Policy.
	2. Simpson, Charles T. (Agr.)	Ph.D.	Associate Professor	Economic Development.
	3. Simpson, Leonard T. (Agr.)	M.S.	Instructor	Dairy Economics.
	4. Smith, Arthur A. (Agr.)	Ph.D.	Assistant Professor	Production Economics.
	5. Stewart, Robert S. (Agr.)	Ph.D.	Professor	Agricultural Policy.
	6. Zimmerman, Charles W. (Agr.)	Ph.D.	Associate Professor	Agricultural Credit.
	7. Tierson, Walter T. (Agr.)	Ph.D.	Associate Professor	Production Economics.
	8. Thomsons, Malcolm C. (Agr.)	Ph.D.	Associate Professor	Production Economics.
X. A. B.				
	1. Hobbs, Alexander M.	Ph.D.	Professor of Biology Law and Ethics	Law, Ethics where there are no Business Ls.
	2. Sandy, Lowell Dewitt	Ph.D.	Professor of Education	Course Analysis.

III-A cont. (Business Administration and Economics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	c.	Barrett, Gerald Alan	LL.B.	Associate Professor of Business Law	Business Policy.
	d.	Blaine, James Cyril D.	Ph.D.	Professor of Transportation.	Transportation: Air, Truck, and Water.
	e.	Buchanan, Daniel H.	Ph.D.	Professor of Economics	Retired.
	f.	Bunting, Robert L.	A.M.	Assistant Professor of Economics	Labor Economics: Factors in the Labor Market.
	g.	Calhoon, Richard P.	A.M.	Professor of Personnel Management	Human Relations in Industry.
	h.	Carroll, Dudley D.	M.A.	Professor of Economics	Administrative Organization.
	i.	Carter, Clyde Cass	Ph.D.	Associate Professor of Business Law	Regulation of Public Utilities and Common Carriers in North Carolina.
	j.	Cowden, Dudley J.	Ph.D.	Professor of Economic Statistics	Statistical Methods for Use in Quality Control.
	k.	Dykstra, John Edward	D.C.S.	Professor of Industrial Management	Industrial Management Case Studies.
	l.	Fein, Rashi	B.A.	Lecturer in Economics	Medicine and Social Insurance.
	m.	Fyfe, Gordon Samuel	M.B.A.	Assistant Professor of Marketing	Marketing.
	n.	George, Claude Swanson	Ph.D.	Associate Professor of Industrial Management	Industrial Management Case Studies.

III-A cont. (Business Administration and Economics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	o.	Graham, Willard J.	Ph.D. (C.P.A.)	Professor of Accounting	Accounting Policies.
	p.	Guthrie, Paul N.	Ph.D.	Professor of Economics	Labor Relations.
	q.	Heath, Milton S.	Ph.D.	Professor of Economics	Public Policy: Economic Concentration and Public Policy.
	r.	Ingram, James C.	Ph.D.	Assistant Professor of Economics	International Economics: Capital Imports and Balance of Payments.
	s.	Kirkpatrick, Charles A.	D.C.S.	Professor of Marketing	Advertising Practice and Policy.
	t.	Kreps, Clifton H.	Ph.D.	Associate Professor of Banking	Banking.
	u.	Langenderfer, Harold Q.	D.B.A. (C.P.A.)	Assistant Professor of Accounting	Federal Income Tax.
	v.	Logsdon, Clement S.	Ph.D.	Professor of Marketing	County Econimic Resources and Potentials, Marketing Structures and Policies.
	w.	McGregor, Clarence H.	Ph.D.	Professor of Marketing	Markets: Consumption Patterns and Market Behavior in the Southeast, Marketing Structures and Policies.
	x.	Mouzon, Olin Terrell	Ph.D.	Professor of Economics	International Economics: International Resources and National Policy.

III-A cont. (Business Administration and Economics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	y.	O'Neil, John T.	Ph.D.	Associate Professor of Finance	Finance.
	z.	Peacock, Earl Ewart	M.B.A. (C.P.A.)	Professor of Accounting	Accounting.
	aa.	Pfouts, Ralph W.	Ph.D.	Associate Professor of Economics	Consumer Behavior Theory; Public Policy: Welfare Studies.
	bb.	Philbrook, Clarence E.	Ph.D.	Associate Professor of Economics	Labor Economics: Wage Policy and Theories of Employment, Monetary Theory and Economic Behavior.
	cc.	Pierpont, Andrew W.	Ph.D.	Associate Professor of Business Administration	Finance.
	dd.	Poston, Charles F.	M.A.	Lecturer in Business Administration	Finance.
	ee.	Reynolds, Isaac N.	S.M.	Lecturer in Accounting	Accounting.
	ff.	Sadler, Alton Guy	M.S. (C.P.A.)	Associate Professor of Accounting	Accounting Policies.
	gg.	Sarle, Rodney G.	M.B.A.	Lecturer in Business Administration	Accounting.
	hh.	Schwenning, Gustav T.	Ph.D.	Professor of Business Administration	Industrial Management.
	ii.	Schwentker, Frank J.	C.L.U.	Julian Price Lecturer in Life Insurance	Insurance Problems.

			IN ITSELF DIFFERENCE	
41.	[illegible]	C'I'H'	[illegible]	[illegible]
			COUNTERFEITED	
42.	[illegible]	EH'D'	[illegible]	[illegible]
			SUBSTITUTION	
43.	[illegible]	H'E'I'	[illegible]	[illegible]
		(C'E'I')	OF [illegible]	
44.	[illegible]	K'S'	[illegible]	[illegible]
			[illegible]	
45.	[illegible]	G'K'	[illegible]	[illegible]
			SUBSTITUTION	
46.	[illegible]	H'V'	[illegible]	[illegible]
			[illegible]	
47.	[illegible]	EH'D'	[illegible]	[illegible]
			[illegible]	
48.	[illegible]	EH'D'	[illegible]	[illegible]
			[illegible]	
49.	[illegible]	EH'D'	[illegible]	[illegible]
		(C'E'I')		
50.	[illegible]	H'E'I'	[illegible]	[illegible]
			OF [illegible]	
51.	[illegible]	EH'D'	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] [illegible] (SUBSTITUTE SUBSTITUTIONS FOR EXPONENTS)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	jj.	Spruill, Corydon P.	B.Litt.	Professor of Economics Dean of the Faculty	Economics.
	kk.	Stanback, Thomas M.	Ph.D.	Assistant Professor of Economics	Industrial Instability.
	ll.	Terrill, William A.	Ph.D. (C.P.A.)	Associate Professor of Accounting	Accounting Policies.
	mm.	Whitehill, Arthur M.	Ph.D.	Associate Professor of Business Administration	Human Relations in Industry.
	nn.	Winslow, Rex Shelton	Ph.D.	Professor of Economics Director, Bureau of Business Services and Research	Economics.
	oo.	Wolf, Harry DeMerle	Ph.D.	Professor of Economics	Labor Economics: Labor Force and Industrial Change.
	pp.	Woodward, George M.	M.A.	Lecturer in Economics	Industry Study: Economics of the Marine Fisheries.

2. Library Resources.

Duke

The Department of Economics does not have a separate library but our collection of books dealing with economics in the general library is large and quite complete. Substantially all important economic journals published in the United States and most published abroad are available.

N. C. State

See statement in "General Library Resources" for N. C. State College.

U. N. C.

A collection of more than 40,000 volumes is housed in the recently constructed wing of the main library. Regular subscriptions to 125 scholarly and trade journals and thirty special informational services are available. A special librarian is in charge of the Business Administration and Economics Library.

3. Special Facilities and Equipment.

Duke

Special facilities include a statistical laboratory and an accounting laboratory.

Special equipment includes:

Statistical Machines: 18 Marchant Calculators, 1 Friden Calculator, 1 Monroe Calculator, and 1 Sunstrand Adding Machine.

Accounting Machines: 3 Electric Burroughs Machines - Adding, 5 Hand - New Burroughs Adding Machines, 10 Hand - Old Burroughs Adding Machines, 1 Marchant Calculator, 1 Electric 10 key Friden Adding Machine, 1 Electric 10 key Monroe Adding Machine, 1 Projector - American Optical Company and Accessories.

N. C. State

Facilities adequate for carrying out investigations in areas of research pertinent to field.

U. N. C.

Laboratories equipped with modern business machines.

4. Major Areas of Present Research Activity.

Duke

a. Economic development of underdeveloped areas.

Duke

b. Trends in imports of goods and services into the United States and factors affecting these trends.
c. Factors accounting for differences in income payments among states.
d. Policies and practices in the expenditure of governmental funds in Canada and in Australia.
e. Characteristics of economic systems of national states.
f. Monopoly and competition in the United States.
g. Resource allocation in the Southeast and governmental policies associated therewith.
h. Practices in collective bargaining in the United States, in Australia, and in Great Britain.
i. The international development of economic thought.
j. International demographic development.
k. Monetary and fiscal policies of the federal government.

N. C. State

a. Linear programming in agriculture.
b. Factors affecting agricultural policy.
c. Production economics in agriculture.

U. N. C.

a. Accounting policies.
b. Advertising practice and policy.
c. Business policy.
d. Consumer behavior theory.
e. County economic resources and potentials.
f. Federal income tax.
g. Human relations in industry.
h. Income analysis.
i. Industrial instability.
j. Industrial management case studies.
k. Industry study: economics of the marine fisheries.
l. Insurance problems.
m. International economics:
   1. Capital imports and balance of payments.
   2. International resources and national policy.
n. Labor economics:
   1. Collective bargaining and the South.
   2. Labor force and industrial change.
   3. Factors in the labor market.
   4. Wage policy and theories of employment.

U. N. C.

o. Markets:
   1. Consumption patterns and market behavior in the Southeast.
   2. Marketing structures and policies.
p. Medicine and social insurance.
q. Monetary theory and economic behavior.
r. Public policy:
   1. Economic concentration and public policy.
   2. Regulation of public utilities and common carriers in North Carolina.
   3. Welfare studies.
s. Statistical methods for use in quality control.
t. Transportation: air, truck, and water.

CHEMISTRY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Saylor, John H.	Ph.D.	Professor Chairman of Department	Analytical Methods and Polarography, Vapor Pressures, Gas Solubilities.
	b. Bigelow, Lucius A.	Ph.D.	Professor	Organic Fluorine Chemistry.
	c. Bradsher, Charles K.	Ph.D.	Professor	Aromatic Cyclodehydration, Fungicides, Tumor-necrotizing Agents, Estrogens, Methods of Synthesis.
	d. Brown, Frances C.	Ph.D.	Associate Professor	Organic Fungicides and Bactericides.

N. S. D.

o. Tourism.
A. Consumer price indexes and market behavior in one Southeast.
s. Marketing strategies and relations.
P. Statistics and secret language.
d. Industry theory and economic behavior.
T. Public policy.
r. Economic controversies and public policy.
S. Evaluation of public utilities and income centers in North Carolina.
e. Welfare studies.
s. Statistical analysis for use in quality control.
t. Transportation: air, rail, and water.

Chairman:

1. Staff Personnel.

Instructor	Staff Member Assigned Course	Rank	Qualifications
Geo.			
a. Alvord, John R.	Ph.D. Professor Chairman of Department		Analytical Statistics and Relationship, Tests, Measurements, Job Evaluation.
b. Grading, Andrew A.	Ph.D. Professor		Operations Planning Research.
c. Strobel, Charles E.	Ph.D. Instructor		Statistics Quality Control, Time Study, Industrial Engineering, Motion and Operations.
d. Cone, Fletcher A.	Ph.D. Associate Professor		Statistics Theory and Relationships.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	e. Gross, Paul M.	Ph.D.	Professor	Tobacco Chemistry, Solubility of Non-electrolytes, Kerr Effect.
	f. Hauser, Charles R.	Ph.D.	Professor	Organic Mechanism Reactions Involving Organometallic Compounds and Organic Synthesis of Organic Compounds.
	g. Hill, Douglas G.	Ph.D.	Professor	Inorganic Chemistry, Fused Salts and Electrochemistry, Infrared Studies, Reaction Mechanisms.
	h. Hobbs, Marcus E.	Ph.D.	Professor	Dielectric Studies, Infrared and Ultraviolet Investigations, Tobacco Chemistry, Nuclear Magnetic Resonance.
	i. Krigbaum, William R.	Ph.D.	Assistant Professor	Physical Chemistry and Thermodynamics of High Polymers.
	j. Poirier, Jacques C.	Ph.D.	Assistant Professor	Statistical Mechanics of Fluids.
	k. Strobel, Howard A.	Ph.D.	Assistant Professor	Ion Exchange, Solutions of Electrolytes.
	l. Vosburgh, Warren C.	Ph.D.	Professor	Complex Salts, Analytical Methods and Electrochemistry.

Institution	Staff Member	Degree	Position	Special Competence
Duke	6. Gross, Paul M.	Ph.D.	Professor	Tobacco Chemistry, Polarizability of Ion-electrolytes, Kerr Effect.
	7. Hunter, Charles E.	Ph.D.	Professor	Organic Mechanism Reactions Involving Organometallic Compounds and Organic Arsenicals of Organic Compounds.
	8. Hill, Douglas G.	Ph.D.	Professor	Inorganic Chemistry, Fused Salts and Electrochemistry, Infrared Studies, Reaction Mechanisms.
	9. Dobbs, Herron E.	Ph.D.	Professor	Malarial Studies, Infrared and Ultraviolet Investigations, Tobacco Chemistry, Nuclear Magnetic Resonance.
	10. Kingsley, William R.	Ph.D.	Assistant Professor	Physical Chemistry and Thermodynamics of High Polymers.
	11. Sudrick, Jacques C.	Ph.D.	Assistant Professor	Statistical Mechanics of Fluids.
	12. Stewart, Edward A.	Ph.D.	Assistant Professor	Ion Exchange, Solutions of Electrolytes.
	13. Vercruysse, Norman G.	Ph.D.	Professor	Organic Salts, Analytical Methods and Electrochemistry.

III-A cont. (Chemistry)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	m.	Wilder, Pelham, Jr.	Ph.D.	Assistant Professor	Physical Organic Chemistry and Organic Mechanisms.
N. C. State	a.	Peterson, W. J. (Agr.)	Ph.D.	Professor Head of Department	Chemistry-Nutrition.
	b.	Bowery, Thomas G. (Agr.)	Ph.D.	Associate Professor	Organic Chemistry, Pesticides.
	c.	Reid, W. A. (Agr.)	Ph.D.	Professor	Organic Chemistry
	d.	Simmons, Raymond O. (Agr.)	Ph.D.	Assistant Professor	Chemistry - Biochemistry.
U. N. C.	a.	Roe, Arthur	Ph.D.	Kenan Professor Chairman of Department	Aromatic and Heterocyclic Fluorine Compounds, Isotope Effect of Carbon-14.
	b.	Bright, David Bruce	Ph.D.	Instructor	Synthetic Organic Chemistry.
	c.	Bunnett, Joseph F.	Ph.D.	Associate Professor	Physical Organic Chemistry, Kinetics, and Mechanisms.
	d.	Crockford, Horace D.	Ph.D.	Professor	Theoretical Electrochemistry, Theory of Solutions of Electrolytes.
	e.	Dobbins, James T.	Ph.D.	Professor	Quantitative and Qualitative Analysis.

Inscription	Serial Number	Donor Number	Location	Special Commentary
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	f. Knight, Samuel B.	Ph.D.	Professor	Electrochemistry, Absorption Spectra, Flame Photometry.
	g. Knox, Kerro	Ph.D.	Associate Professor	Rhenium and Technetium Chemistry, Isopiestic Studies.
	h. McKee, Robert L.	Ph.D.	Associate Professor	Heterocyclic Organic Compounds, Alkaloids, Antimalarials.
	i. Markham, Edwin C.	Ph.D.	Professor	Heterogeneous Reaction Rates, Analytical Chemistry, Polarography.
	j. Morrow, John C., III	Ph.D.	Associate Professor	Low Temperature Calorimetry, Thermodynamics of Liquid Helium Solutions.
	k. Reilley, Charles N.	Ph.D.	Assistant Professor	Coulometric Analysis, Potentiometric and High Frequency Titrimetry, Colorimetry.
	l. Rice, Oscar K.	Ph.D.	Professor	Quantum Mechanics, Photochemistry, Theory of Critical Phenomena.
	m. Tyree, Sheppard Y.	Ph.D.	Associate Professor	Fluorine, Selenium, Zirconium and Hafnium Chemistry, Anhydrous Metal Halides, Aggregation of Inorganic Ions in Aqueous Media.

Institution	Staff Member	Highest Earned Degree	Position	Special Interests
D. U. C.	f. Knight, Samuel S.	Ph.D.	Professor	Electrochemistry, Absorption Spectra, Flame Photometry.
	g. Knox, Terry	Ph.D.	Associate Professor	Rhenium and Technetium Chemistry, Isotopic Studies.
	h. McKee, Robert L.	Ph.D.	Associate Professor	Heterocyclic Organic Compounds, Alkaloids, Antibiotics.
	i. Morrow, Ralph C.	Ph.D.	Professor	Heterogeneous Reaction Rates, Analytical Chemistry, Polarography.
	j. Morrow, John C., III	Ph.D.	Associate Professor	Low Temperature Calorimetry, Thermodynamics of Liquid Helium Solutions.
	k. Reilley, Charles N.	Ph.D.	Assistant Professor	Coulometric Analysis, Potentiometric and High Frequency Titrimetry, Colorimetry.
	l. Rice, Oscar K.	Ph.D.	Professor	Quantum Mechanics, Photochemistry, Theory of Critical Phenomena.
	m. Tyree, Sheppard Y.	Ph.D.	Associate Professor	Fluorine, Selenium, Zirconium and Hafnium Chemistry, Anhydrous Metal Halides, Aggregation of Inorganic Ions in Aqueous Media.

2. Library Resources.

Duke

The Chemistry Department Library located in the Chemistry Building has a total of approximately 17,000 volumes. Periodicals and reference sources are complete for all but extraordinary requirements for research in the fields of analytical, inorganic, organic, and physical chemistry. Special resources include holdings in the field of tobacco chemistry.

N. C. State

See statement in "General Library Resources" for N. C. State College.

U. N. C.

The Chemistry Library and reading room contain complete sets of the most important chemical periodicals, many reference books, and a collection of books of historical value and interest, amounting altogether to more than 13,000 volumes.

3. Special Facilities and Equipment.

Duke

Special facilities include a laboratory for low level radiochemical work, a small machine shop with a full-time machinist, a dust-free laboratory for light scattering measurements, facilities for generating elemental fluorine and studying reactions of same, a laboratory equipped with usual tools for instrumental analysis, and a laboratory equipped for study of reactions at high temperatures (800° - 1000°C).

Special equipment includes: single beam and double beam recording infrared spectrophotometers, point and continuous recording ultraviolet and visible spectrophotometers including fluorescence, gas solubility measuring apparatus, nuclear magnetic resonance measurement system, dielectric constant measuring devices, battery and electrode measuring equipment, recording polarographs, high and low temperature precision rectification columns, light scattering measurement apparatus, photoelectric and miscellaneous recording devices, homogeneous aerosol generator, osmometers, isopiestic measuring apparatus, fraction collector and general chromatographic equipment, chemical microscopy apparatus, scaler and counters for radioactive systems, Zeiss interferometer for solution and gas studies, and low and high pressure hydrogenation apparatus.

N. C. State

Special facilities include two low level radiochemical laboratories, a spectrographic laboratory with dark room, and a stable isotopes laboratory.

Special equipment includes five geiger counters, precision count rate meter, flow and proportional counters, automatic sample changer and timer, electrometer, survey meter (3), a high vacuum gas conversion apparatus, a Nier 60° isotope ratio mass spectrometer, a controlling and recording multipoint differential thermal analysis apparatus, and a precision constant temperature water bath and accessories for D_2O analysis.

U. N. C.

Special facilities include a machine shop operated by a full-time instrument maker and assistant, a well-stocked glass shop attended by an expert glass blower, and adjoining student glass shop with separate facilities for 15 students, a radioisotopes laboratory housed in a separate building, a laboratory for high pressure hydrogenation equipment, a suite of rooms equipped for instrumental analysis (some rooms with temperature and humidity control), complete organic and inorganic microchemical laboratory, and a computing laboratory with Remington Rand punched card equipment for punching, sorting, and tabulating.

Special equipment includes: single and double beam recording infrared spectrophotometers, several ultraviolet and visible spectrophotometers, flame photometers, Littrow emission spectrograph, densitometer, recording polarograph, several high efficiency fractional distillation columns, light-scattering photometer and differential refractometer, isopiestic measurement facilities, large dry box containing analytical balance, precision polarimeter, fluorine generator, scalers and counters for radioactivity work, vibrating reed electrometer, precision equipment for electromotive force measurements, apparatus for magnetic susceptibility measurements, apparatus for vapor pressure measurement at high temperature, single crystal x-ray diffraction apparatus (on order), high-velocity molecular beam apparatus, and heat of solution calorimeter.

4. Major Areas of Present Research Activity.

Duke

a. Physical chemistry and thermodynamics of polymers.
b. Physico-chemical studies of tobacco smoke and investigation of tobacco smoke composition by chromatographic and infrared, ultraviolet and visible absorption measurements,

Duke

c. Nuclear magnetic resonance investigation of systems of chemical interest.
d. High temperature chemistry of inorganic salts.
e. Kinetics and mechanisms of chemical reactions.
f. Infrared absorption studies of association in solution.
g. Study of direct and indirect fluorination of hydrocarbons, halides, ketones, nitriles, amides, amines, and sulfides.
h. Study of synthesis of polycyclic aromatic compounds and of other substances having possible physiological activity with particular reference to fungicides and bacteriocides.
i. Measurements and interpretation of gas solubilities in a variety of non-polar organic solvents.
j. Synthesis and organic mechanisms of rearrangements, condensations, eliminations, etc.
k. Polarographic and fluorimetric studies of azo compounds and their chelates.
l. Properties and activities of ion exchange resins.
m. Electrochemical study of battery electrodes with emphasis on the manganese dioxide electrode.

N. C. State

a. Residues from spray materials.
b. Composition of plant and animal natural products.

U. N. C.

a. Theoretical and experimental studies of the thermodynamics of aqueous solutions of electrolytes containing added organic substances.
b. Chemistry of rhenium and technetium.
c. Synthesis of high purity anhydrous metal halides.
d. Isopiestic and light-scattering studies on electrolytic solutions.
e. Determination of the magnetic properties of inorganic complex compounds.
f. Scattering of high velocity molecular beams.
g. Study of the critical phenomena in two-component systems.
h. Kinetics and mechanisms of chemical reactions, organic and inorganic.
i. Determination of stability constants of metal chelates and investigation of unusual metal complexes.
j. Applications of transitory electrode processes to analytical chemistry.
k. Mineral analysis with flame photometer.
l. Polarography of organic substances and metal chelates.
m. Ultraviolet and infrared studies.

U. N. C.

n. Isotope effect of carbon - 14.
o. Nucleophilic substitution reactions.
p. Organic synthesis, including heterocyclic compounds, especially pyrimidines; and aromatic and heterocyclic fluorine compounds.

CITY AND REGIONAL PLANNING

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Parker, John A.	M.C.P. M.Arch.	Professor of City and Regional Planning (Research Professor in Institute for Research in Social Science) Head of Department	Research Organization and Direction, Planning Organization and Administration, City and Regional Planning.
	b. Chapin, F. Stuart, Jr.	M.C.P.	Professor of City and Regional Planning (Research Professor in Institute for Research in Social Science)	Research Organization and Direction, Urban Planning Methods and Techniques, Urban Redevelopment and Urban Renewal, Economic Base Studies, City and Regional Planning.
	c. Webb, James M.	M.C.P.	Associate Professor of City and Regional Planning	Site Planning, Architecture, City and Regional Planning.

2. Library Resources.

U. N. C.

The City and Regional Planning Library located in the Alumni Building represents

III-A cont. (Chemistry)

N. H. C.

n. Jacobs's effect of radiation - 14.
o. Nucleophilic substitution reactions.
p. Organic synthesis. Including heterocyclic compounds, especially pyridines, and aromatic and heterocyclic fluorine compounds.

CITY AND REGIONAL PLANNING

1. Staff personnel.

Institution	Staff Member	Rank Held	Position	Special Competence
U. M. S.	a. Talbert, John A.	Professor of City and Regional Planning (Research Professor in Institute for Research in Social Science) Head of Department	Research Organization and Direction, Planning and Administration, City and Regional Planning.
	b. Chapin, F. Stuart, Jr.	Professor of City and Regional Planning (Research Professor in Institute for Research in Social Science)	Research Organization and Direction, Urban Planning Methods and Techniques, Urban Redevelopment and Urban Economy, Economic Base Studies, City and Regional Planning.
	c. Wehr, Robert M.	Associate Professor of City and Regional Planning	Site Planning, Architecture, City and Regional Planning.

2. Library Resources.

U. M. C.

The City and Regional Planning Library located in the Alumni Building represents

U. N. C. one of the outstanding research collections in this field in the United States. Most of the periodicals are complete. Special resources include holdings in the British planning literature.

3. Special Facilities and Equipment.

U. N. C.

Special facilities include several well equipped drafting rooms.

Special equipment includes drafting room equipment and materials for the preparation of displays and exhibits.

4. Major Areas of Present Research Activity.

U. N. C.

a. Land use planning for urban areas.
b. Methodology for economic base studies of urban areas.
c. The role of the urban planner.
d. Social aspects of urban land use.
e. Industrial planning in the Soviet Union.
f. Rehabilitation in coastal areas subject to hurricane damage.
g. Zoning and urban aesthetics.
h. New Town design.

CROP MANAGEMENT AND ECOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	a. Gardner, M. E. (Agr.)	B.S.	Professor Head of Department	Horticultural Crops.

III-A cont. (Crop Management and Ecology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	b. Chamblee, D. S. (Agr.)	Ph.D.	Associate Professor	Forage Crop Management.
	c. Gartner, John B. (Agr.)	Ph.D.	Professor	Ornamental Horticultural Crops.
	d. Jenkins, J. M., Jr. (Agr.)	Ph.D.	Professor	Horticultural Crops.
	e. Klingman, Glenn C. (Agr.)	Ph.D.	Professor	Chemical Weed Control.
	f. Lovvorn, Roy Lee (Agr.)	Ph.D.	Director of Instruction, Professor	Plant Ecology.
	g. Rankin, W. H. (Agr.)	M.S.	Associate Professor	Variety Evaluation.
	h. Rud, Orvin E. (Agr.)	M.S.	Instructor	Chemical Weed Control.
	i. Schneider, George W. (Agr.)	Ph.D.	Professor	Horticultural Crops.

2. Library Resources.

N. C. State

See statement under "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

Facilities adequate for carrying out investigations in areas of research pertinent to field.

Qualification	Staff Member	Degree Earned	Position	Special Courses
M. S. Agric.	1. Chandler, D. S. (Agr.)	Ph.D.	Associate Professor	Tropic Crop Management.
	2. Garrner, John B. (Agr.)	Ph.D.	Professor	Ornamental Horticulture; Crops.
	4. Jenkins, J. M., Jr. (Agr.)	Ph.D.	Professor	Horticultural Crops.
	5. Kingman, Glenn C. (Agr.)	Ph.D.	Professor	Chemical Weed Control.
	6. Lovvorn, Roy Lee (Agr.)	Ph.D.	Director of Instruction, Professor	Plant Ecology.
	8. Rankin, W. H. (Agr.)	M.S.	Associate Professor	Variety Evaluation.
	9. Ward, Orvin E. (Agr.)	M.S.	Instructor	Chemical Weed Control.
	10. Schneider, George W. (Agr.)	Ph.D.	Professor	Horticultural Crops.

2. Library Resources.

M. S. Agric.

See statement under "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

M. S. Agric.

Facilities adequate for carrying out investigations in areas of research pertinent to field.

III-A cont. (Crop Management and Ecology)

4. Major Areas of Present Research Activity.

N. C. State

a. Weed control.
b. Forage species and their management.
c. Performance of crop varieties.
d. Management of vegetable crops and tree fruits.

DENTISTRY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
			Crown and Bridge Prosthodontics	
	a. Baker, Claude R.	D.D.S.	Professor Head of Department	Crown and Bridge Prosthodontics.
	b. Miska, Monte G.	D.D.S.	Associate Professor	Crown and Bridge Prosthodontics.
	c. Price, A. Dwight	D.D.S.	Part-time Clinical Instructor	Crown and Bridge Prosthodontics.
	d. Schaefer, Ernest E.	D.M.D.	Instructor	Crown and Bridge Prosthodontics.
	e. Scott, L. G.	D.D.S.	Part-time Clinical Instructor	Crown and Bridge Prosthodontics.
			Dental Hygiene	
	a. Barton, Dorothy J.,	R.D.H.	Part-time Clinical Instructor	Dental Hygiene.

4. Major Areas of Present Research Activity.

1. U. S. States

a. Weed control.
b. Insects and their management.
c. Pollination of crop varieties.
d. Management of vegetable crops and tree fruits.

DIRECTORY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. S. S.				
	Crown and Bridge Prosthodontics			
a. Bauer, Glenda S.		D.D.S.	Professor Head of Department	Crown and Bridge Prosthodontics.
b. Oleva, Vance G.		D.D.S.	Associate Professor	Crown and Bridge Prosthodontics.
c. Frake, A. Dodge		D.D.S.	Part-time Clinical Instructor	Crown and Bridge Prosthodontics.
d. Sanneler, Ernest S.		D.M.D.	Instructor	Crown and Bridge Prosthodontics.
e. Scott, L. G.		D.D.S.	Part-time Clinical Instructor	Crown and Bridge Prosthodontics.
	Dental Hygiene			
a. Barton, Dorothy L.		R.D.H.	Part-time Clinical Instructor	Dental Hygiene.

III-A cont. (Dentistry)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	b.	Beat, Alberta M.	B.S.	Assistant Professor	Dental Hygiene.
	c.	Forbes, Eleanor A.	B.S.	Instructor	Dental Hygiene.
	d.	Griffin, Doris E.	R.D.H.	Part-time Clinical Instructor	Dental Hygiene.
	e.	Herring, Dorothy L.	R.D.H.	Part-time Clinical Instructor	Dental Hygiene.
			Operative Dentistry		
	a.	Sturdevant, Roger E.	D.D.S.	Professor Head of Department	Operative Dentistry.
	b.	Barton, Roger E.	D.D.S.	Instructor	Operative Dentistry.
	c.	Shankle, Robert J.	D.D.S.	Associate Professor	Operative Dentistry.
	d.	Sluder, Troy B., Jr.	D.D.S.	Instructor	Operative Dentistry.
	e.	Sockwell, Clarence E.	D.D.S.	Assistant Professor	Operative Dentistry.
	f.	Sturdevant, Clifford	D.D.S.	Associate Professor	Operative Dentistry.
			Oral Diagnosis and Treatment Planning		
	a.	Evans, Marvin R.	D.D.S.	Professor Head of Department	Oral Diagnosis and Treatment Planning.
	b.	Crandell, Clifton E.	D.D.S.	Instructor	Oral Diagnosis and Treatment Planning.

III-A cont. (Dentistry)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	c.	Richardson, Richard E.	D.D.S.	Associate Professor	Oral Diagnosis and Treatment Planning.
		Oral Surgery			
	a.	Chapin, Marvin E.	D.D.S.	Professor Head of Department	Oral Surgery.
	b.	Wenger, James Q.	D.D.S.	Assistant Professor	Oral Surgery.
	c.	Westrick, Charles M.	D.D.S.	Associate Professor	Oral Surgery.
		Orthodontics			
	a.	Higley, L. B.	D.D.S.	Professor Head of Department	Orthodontics.
	b.	Baker, E. D.	D.D.S.	Part-time Clinical Assistant Professor	Orthodontics.
	c.	Leggette, James A., Jr.	D.D.S.	Part-time Instructor	Orthodontics.
	d.	Nelson, Robert M.	D.D.S.	Associate Professor	Orthodontics.
		Pedodontics			
	a.	Demeritt, W. W.	D.D.S.	Professor, Head of Department, and Assistant Dean	Pedodontics.
	b.	Brauer, John C.	D.D.S.	Professor Dean, School of Dentistry	Pedodontics.

Institution	Staff Member	Highest Earned Degree	Position	Special Interests
D. M. C.	a. Richardson, Stanard E.	D.D.S.	Associate Professor	Oral Diagnosis and Treatment Planning.
	Oral Surgery			
	a. Chaplin, Marvin R.	D.D.S.	Professor Head of Department	Oral Surgery.
	b. Vanore, James D.	D.D.S.	Assistant Professor	Oral Surgery.
	c. Weatrich, Charles R.	D.D.S.	Associate Professor	Oral Surgery.
	Orthodontics			
	a. Bigsby, Roy R.	D.D.S.	Professor Head of Department	Orthodontics.
	b. Baker, E. D.	D.D.S.	Part-time Clinical Assistant Professor	Orthodontics.
	c. Lazzarotto, James A., Jr.	D.D.M.	Part-time Instructor	Orthodontics.
	d. Nelson, Robert M.	D.D.S.	Associate Professor	Orthodontics.
	Pedodontics			
	a. Dworkin, V. W.	D.D.S.	Professor, Head of Department, and Assistant Dean	Pedodontics.
	b. Schauer, John C.	D.D.S.	Professor Dean, School of Dentistry	Pedodontics.

III-A cont. (Dentistry)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	c.	Bitler, Glenn F.	D.D.S.	Part-time Clinical Instructor	Pedodontics.
	d.	Burket, Joseph F.	D.D.S.	Associate Professor	Pedodontics.
	e.	Harris, Franklin G.	D.D.S.	Part-time Clinical Instructor	Pedodontics.
	f.	Lindahl, Roy L.	D.D.S.	Assistant Professor	Pedodontics.
		Periodontology and Oral Pathology			
	a.	Hunter, Grover C., Jr.	D.D.S.	Professor Head of Department	Periodontology and Oral Pathology.
	b.	Bumgardner, L. F.	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	c.	Chamblee, H. Royster	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	d.	Everard, Stuart J. G.	D.D.S.	Instructor	Periodontology and Oral Pathology.
	e.	Gallagher, J. W.	D.D.S.	Professor and Director of Dental Hygiene	Periodontology and Oral Pathology.
	f.	Gay, S. P.	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	g.	Kouns, J. C.	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	h.	Sager, Robert H.	D.D.S.	Assistant Professor	Periodontology and Oral Pathology.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. M. O.	3. Ritter, Glenn F.	D.D.S.	Part-time Clinical Instructor	Pedodontics.
	4. Burkel, Joseph F.	D.D.S.	Associate Professor	Pedodontics.
	5. Harris, Franklin O.	D.D.S.	Part-time Clinical Instructor	Pedodontics.
	6. Lindahl, Roy L.	D.D.S.	Assistant Professor	Pedodontics.

Periodontology and Oral Pathology

	1. Hunter, Grover C., Jr.	D.D.S.	Professor Head of Department	Periodontology and Oral Pathology.
	2. Hagenbuch, L. F.	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	3. Chaddick, H. Morrow	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	4. Tarnard, Steven A. O.	D.D.S.	Instructor	Periodontology and Oral Pathology.
	5. Gallagher, J. W.	D.D.S.	Professor and Director of Dental Hygiene	Periodontology and Oral Pathology.
	6. Ong, M. F.	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	7. Kuhns, J. G.	D.D.S.	Part-time Clinical Instructor	Periodontology and Oral Pathology.
	8. Sager, Robert H.	D.D.S.	Assistant Professor	Periodontology and Oral Pathology.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
			Prosthodontics	
	a. Vinton, Paul W.	D.M.D.	Professor Head of Department	Prosthodontics.
	b. Coble, L. G.	D.D.S.	Part-time Clinical Professor	Prosthodontics.
	c. Dobson, David P.	D.D.S.	Associate Professor	Prosthodontics.
	d. Sowter, John B.	D.D.S.	Assistant Professor	Prosthodontics.
			Public Health and Dental Science	
	a. Knudtzon, Kermit F.	D.D.S.	Associate Professor	Public Health and Dental Science.

2. Library Resources.

U. N. C.

See statement on "Division of Health Affairs" in "General Library Resources" for the University of North Carolina.

3. Special Facilities and Equipment.

U. N. C.

Special facilities and equipment include humidity and temperature control installation in research laboratory for dental materials. Sponsored by the Dental Foundation of North Carolina, Inc. This laboratory includes a Tinius Olsen machine and a centrifugal machine.

III-A cont. (Dentistry)

4. Major Areas of Present Research Activity.

U. N. C.

a. Casting procedure for dental gold inlays and identification of reasons for voids between the sprue and inlay pattern.
b. Chrome plating potentials for various dental models.

ENGINEERING

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
	Aeronautical			
N. C. State	a. Pinkerton, Robert M.	B.S.	Professor	Aeronautical Engineering.
	Ceramic			
N. C. State	a. Bell, William C.	Ph.D.	Research Professor	Ceramic Engineering.
	b. Kriegel, W. Wurth	Dr.Ing.	Professor	Ceramic Engineering.
	Chemical			
N. C. State	a. Schoenborn, Edward M.	Ph.D.	Professor Head of Department	Chemical Engineering.
	b. Beatty, Kenneth O., Jr.	Ph.D.	Professor	Chemical Engineering.

III-A cont. (Engineering)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	c. Farrell, James K.	Ph.D.	Assistant Professor	Chemical Engineering.
	d. McAllister, Robert A.	Ph.D.	Associate Professor	Chemical Engineering.
	e. Pike, F. Philips	Ph.D.	Professor	Chemical Engineering.
	f. Richardson, Frances	M.S.	Research Associate	Chemical Engineering.
			Civil	
Duke	a. Williams, J. W.	M.S.	Associate Professor Acting Chairman of Department	Highway Planning and Design, Experimental Analysis and Testing of Engineering Materials.
	b. Arges, K. P.	M.S.	Assistant Professor	Experimental Stress Analysis and Testing of Structural Members, Engineering Reports.
	c. Gardner, W. H., Jr.	M.Engr.	Assistant Professor	Structural Design, Analysis of "Flow and Fracture of Solids" with Special Emphasis on Soils and Concrete.
	d. Palmer, A. E.	C.E.	Associate Professor	Experimental Stress Analysis and Testing of Structural Members, Structural Design.
	e. Peterson, James E.	M.S.C.E.	Instructor	Research and Analysis in Hydraulics, Structural Design and Analysis.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
d. C. State	c. Farwell, Louis R.	Ph.D.	Assistant Professor	Electrical Engineering.
	d. Tomlinson, Robert A.	Ph.D.	Associate Professor	Chemical Engineering.
	e. Pilbe, R. Philip	Ph.D.	Professor	Chemical Engineering.
	f. Richardson, Frederer	M.S.	Research Associate	Chemical Engineering.

Class

Date				
	a. Williams, J. M.	M.S.	Associate Professor Acting Chairman of Department	Highway Planning and Design, Experimental Analysis and Testing of Bituminous Materials.
	b. Argos, K. E.	M.S.	Assistant Professor	Experimental Stress Analysis and Testing of Structural Members, Engineering Reports.
	c. Gardner, W. E., Jr.	M.Mgr.	Assistant Professor	Structural Design, Analysis of "Flow and Pressure of Solids" with General Emphasis on Soils and Concrete.
	d. Falvey, A. E.	C.E.	Associate Professor	Experimental Stress Analysis and Testing of Structural Members, Structural Design.
	e. Pederson, James S.	M.S.C.E.	Instructor	Research and Analysis in Materials, Structural Design and Analysis.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	f. Stottlemyer, P. C.	M.S.	Assistant Professor	Research Analysis and Design in Field of Structural and Hydraulic Engineering.
	g. Tharp, Kenneth J.	B.S.C.E.	Instructor	Municipal Engineering, Structure Design and Surveying.
N. C. State	a. Fadum, Ralph E.	S.D.	Professor Head of Department	Civil Engineering.
	b. Babcock, Willard F.	S.M.	Professor	Civil Engineering.
	c. Bramer, Charles R.	E.M.	Professor	Civil Engineering.
	d. Mann, Carroll L., Jr.	C.E.	Professor	Civil Engineering.
	e. McCullough, Charles R.	M.S.	Associate Professor	Civil Engineering.
		Electrical		
Duke	a. Vail, Charles R.	M.S.	Associate Professor Executive Officer of Department	High Voltage Phenomena, Dielectric Breakdown.
	b. Artley, John L.	M.S.E.	Assistant Professor	Ferro-Magnetics and Associated Electro-magnetic Devices.
	c. Egerton, Frank N.	E.E.	Associate Professor	Electric Heating.

Institution	Staff Member	Highest Earned Degree	Position	Special Interests
Ohio				
	4. Stoutemyer, F. O.	M.S.	Assistant Professor	Research, Analysis and Design in Field of Structural and Hydraulic Engineering.
	5. Thorp, Kenneth J.	D.S.C.E.	Instructor	Municipal Engineering, Structure Design and Surveying.
N. C. State				
	a. Faires, Ralph E.	S.D.	Professor Head of Department	Civil Engineering.
	b. Babcock, William F.	S.M.	Professor	Civil Engineering.
	c. Bowser, Charles E.	S.M.	Professor	Civil Engineering.
	d. Mann, Carroll L., Jr.	C.E.	Professor	Civil Engineering.
	e. McCullough, Charles R.	M.S.	Associate Professor	Civil Engineering.
Illinois				
	a. Vail, Charles R.	M.S.	Associate Professor Electric Utilities of Department	High Voltage Engineering, Industrial Electrics.
	b. Artley, John E.	M.S.E.	Assistant Professor	Ferro-Magnetics and Associated Electro-magnetic Devices.
	c. Egerton, Frank N.	E.E.	Associate Professor	Electric Heating.

III-A cont. (Engineering)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	d. Koenig, J. Frank	M.S.E.E.	Assistant Professor	Feedback Control, Computers, Industrial Electronics, Instrumentation.
	e. Kraybill, Edward K.	M.S.E.	Associate Professor	Illumination.
	f. Meier, Otto, Jr.	M.S.	Associate Professor	Nucleonics, Power, Illumination.
	g. Owen, Harry A., Jr.	M.S.E.	Assistant Professor	Communications, Instrumentation, Medical Electronics.
	h. Seeley, Walter J.	M.S.E.E.	Professor Dean, School of Engineering	Power Transmission.
	i. Williams, Wallace L.	B.E.E.	Instructor	Power, Machinery, Transmission.
N. C. State	a. Hoadley, George B.	D.Sc.	Professor Head of Department	Electrical Engineering.
	b. Barclay, William J.	Ph.D.	Associate Professor	Electrical Engineering.
	c. Carson, Victor S.	Ph.D.	Professor	Electrical Engineering.
	d. Eckels, Arthur R.	D.Eng.	Professor	Electrical Engineering.
	e. Gauster, Wilhelm F.	Sc.D.	Professor	Electrical Engineering.
	f. Lampe, J. Harold	Dr.Eng.	Professor Dean, School of Engineering	Electrical Engineering.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
	d. Kosels, J. Frank	M.S.E.	Assistant Professor	Feedback Control, Computers, Industrial Electronics, Instrumentation.
	e. Kraynill, Robert K.	M.S.E.	Associate Professor	Illumination.
	f. Meier, Otto, Jr.	M.S.	Associate Professor	Electronics, Power, Illumination.
	g. Owen, Harry A., Jr.	M.S.E.	Assistant Professor	Communications, Instrumentation, Medical Electronics.
	h. Sealy, Walter J.	M.S.E.E.	Professor Dean, School of Engineering	Power Transmission.
	i. Williams, Wallace C.	B.E.E.	Instructor	Power, Machinery, Transmission.
N. C. State				
	a. Beckley, George D.	D.Sc.	Professor Head of Department	Electrical Engineering.
	b. Bertsley, William J.	Sc.D.	Associate Professor	Electrical Engineering.
	c. Carson, Victor S.	Sc.D.	Professor	Theoretical Engineering.
	d. Dokell, Arthur R.	D.Eng.	Professor	Electrical Engineering.
	e. Gaupter, William R.	Sc.D.	Professor	Electrical Engineering.
	f. Tempe, J. Harold	Sc.D.	Professor Dean, School of Engineering	Electrical Engineering.

III-A cont. (Engineering)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	g.	Stevenson, W. D., Jr.	M.S.	Professor	Electrical Engineering.
	h.	Tompkins, Edwin H.	Ph.D.	Research Engineer	Electrical Engineering.
			Industrial		
N. C. State	a.	Carson, Robert G., Jr.	Ph.D.	Professor Head of Department	Industrial Engineering.
	b.	Furlong, R. Dulaney	M.S.	Associate Professor	Industrial Engineering.
	c.	Johnson, E. Sigurd	M.F.	Professor	Furniture Manufacturing and Management.
			Mechanics		
N. C. State	a.	Smith, George Wallace	D.Sc.	Professor Head of Department	Engineering Mechanics.
	b.	Long, Leonard W.	M.S.	Associate Professor	Engineering Mechanics.
	c.	Mitchell, Adolphus	M.S.	Professor	Engineering Mechanics.
			Mechanical		
Duke	a.	Kenyon, Van L., Jr.	M.M.E.	Associate Professor Acting Chairman of Department	Power Plants, Boilers, Protective Atmospheres, Solar Heating, Fluid Mechanics, and Thermodynamics.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	g. Stevenson, W. D., Jr.	M.S.	Professor	Electrical Engineering.
	h. Tompkins, Ronald H.	Ph.D.	Research Engineer	Electrical Engineering.
	Industrial			
N. C. State				
	a. Cannon, Robert D., Jr.	Ph.D.	Professor Head of Department	Industrial Engineering.
	b. Fuelling, R. Delaney	M.S.	Associate Professor	Industrial Engineering.
	c. Johnson, E. Edward	M.P.	Professor	Furniture Manufacturing and Management.
	Mechanics			
N. C. State				
	a. Smith, George Wallace	D.Sc.	Professor Head of Department	Engineering Mechanics.
	b. Long, Leonard V.	M.S.	Associate Professor	Engineering Mechanics.
	c. Mitchell, Adolphus	M.S.	Professor	Engineering Mechanics.
	Mechanical			
N. C. State				
	a. Kenyon, Van E., Jr.	M.M.E.	Associate Professor Acting Chairman of Department	Power Plants, Boilers, Protective Atmospheres, Solar Heating, Fluid Mechanics, and Thermodynamics.

III-A cont. (Engineering)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	b. Elsevier, Ernest	M.S.M.E.	Assistant Professor	Internal Combustion Engines. S.A.E. and A.S.T.M. Testing of Engines, Fuel Testing, Lubricating Oil Testing, Industrial Consultant on Boilers, Textile Heating, Ceramic Baking, Cost Analysis, etc.
	c. Fulton, C. D., Jr.	Sc.D.	Assistant Professor	Aerothermodynamics, Thermodynamics, Fluid Mechanics, Combustion, Heat Transfer, Ram Jets, Fuel Spray Nozzles, Ranque (Hilsch) Tubes, Ejectors, Magnetic Cooling and Cryogenics.
	d. Reed, F. J.	M.S.	Associate Professor	Heating, Air Conditioning, Refrigeration, and Heat Transfer.
	e. Wilbur, L. C.	M.S.	Assistant Professor	Thermodynamics (Steam Power), Metallurgy.
N. C. State	a. Hanson, Karl P.	M.S.	Professor Head of Department	Mechanical Engineering.
	b. Brose, King R.	B.M.E.	Research Associate	Mechanical Engineering.
	c. Conner, N. W.	M.S.	Director of Engineering Research	Mechanical Engineering.
	d. Doolittle, Jesse S.	M.S.	Professor	Mechanical Engineering.

Institution	Staff Member	Highest Earned Degree	Position	Research Concentration
Iowa State College	b. Blaszkiewicz, Edward	M.S.E.	Assistant Professor	Thermal Conduction Studies, S-A-E, and A.S.T.M. Testing of Materials, Fuel Testing, Lubricating Oil Testing, Industrial Consultant on Boilers, Textile Machinery, Corrosion Factors, Dust Analysis, etc.
	c. Fulton, C.D., Jr.	Sc.D.	Assistant Professor	Aerodynamics, Thermodynamics, Fluid Mechanics, Combustion, Heat Transfer, Gas Data, Fuel Supply Studies, Furnace (Boiler) Types, Efficiency, Research Courses and Laboratories.
	d. Heck, R. L.	M.S.	Associate Professor	Heat Loss, Air Conditioning, Refrigeration, and Heat Transfer.
	e. Miller, L.G.	M.S.	Assistant Professor	Thermodynamics (Steam Power), Heat Engines.
Kansas State College	a. Barnes, Earl F.	M.S.	Professor Head of Department	Mechanical Engineering.
	b. Brown, Clyde F.	B.M.E.	Research Associate	Mechanical Engineering.
	c. Conover, R. W.	M.S.	Director of Industrial Research	Mechanical Engineering.
	d. Dodgeville, Jesse A.	A.S.	Professor	Mechanical Engineering.

III-A cont. (Engineering)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	e.	Faires, Virgil M.	M.S.	Professor	Mechanical Engineering.
	f.	Knight, Richard B.	M.S.	Professor	Mechanical Engineering.
	g.	Lee, John F.	M.S.	Professor	Mechanical Engineering.
	h.	McDonald, Patrick H.	Ph.D.	Research Associate Professor	Mechanical Engineering.
	i.	Nelson, L. C.	Ph.D.	Associate Professor	Mechanical Engineering.
	j.	Rice, Robert B.	M.E.	Professor	Diesel and Internal Combustion Engines.
	k.	Giles, G. W. (Agr.)	M.S.	Professor, Head of Agricultural Engineering	Mechanization.
	l.	Bowen, Henry D. (Agr.)	Ph.D.	Assistant Professor	Cotton Mechanization.
	m.	Hassler, Francis J. (Agr.)	Ph.D.	Professor	Tobacco Curing.
	n.	Mills, William T. (Agr.)	B.S.A.E.	Instructor	Peanut Mechanization.
	o.	Parker, Blaine F. (Agr.)	Ph.D.	Assistant Professor	Farm Structures.
	p.	Splinter, William E. (Agr.)	Ph.D.	Associate Professor	Tobacco Mechanization.
	q.	Suggs, Charles W. (Agr.)	M.S.	Research Instructor	Tobacco Mechanization.
	r.	Usry, Sidney H. (Agr.)	B.S.	Assistant Professor	Crop Processing.

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	s.	van Schilfgaarde, J. (Agr.)	Ph.D.	Assistant Professor	Drainage.
	t.	Weaver, J. W., Jr. (Agr.)	B.S.	Professor	Crop Drying.
	u.	Weldon, Nathaniel W. (Agr.)	B.S.	Assistant Professor	Tobacco Curing.
	v.	Wilson, Thomas V. (Agr.)	M.S.	Associate Professor	Irrigation.
		Metallurgy			
N. C. State	a.	Austin, William W., Jr.	Ph.D.	Professor Head, Department of Mineral Industries	Metallurgy.
	b.	Brown, B. Floyd	S.D.	Research Associate Professor	Metallurgy.
	c.	Stadelmaier, Hans H.	Diplom-Physiker	Research Associate Professor	Metallurgy.
		Nuclear			
		See Physics			
		Sanitary			
N. C. State	a.	Nemerow, Nelson L.	Ph.D.	Associate Professor	Civil Engineering.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	b. Smallwood, Charles, Jr.	M.S.	Associate Professor	Civil Engineering.
U. N. C.	a. Okun, Daniel A. (Public Health)	Sc.D.	Associate Professor of Sanitary Engineering Head of Department	Sanitary Engineering.
	b. Chanlett, Emil T. (Public Health)	M.S.S.E.	Associate Professor of Sanitary Engineering	Industrial Hygiene and Environmental Sanitation.
	c. Granstrom, Marvin L. (Public Health)	Ph.D.	Associate Professor of Sanitary Engineering	Sanitary Engineering and Sanitary Chemistry
	d. Kelso, Gilbert L. (Public Health)	M.P.H.	Associate Professor of Sanitary Science	Environmental Sanitation.
	e. Lawton, Gerald (Public Health)	Ph.D.	Assistant Professor of Sanitary Chemistry	Sanitary Chemistry.

2. Library Resources.

Duke

The College of Engineering Library located in the Engineering Building has a total of 22,376 volumes. A total of 291 periodicals is received of which 155 are bound. Periodicals and reference sources are excellent in the general field of electrical engineering. Special attention is being given to building up reference collections in the following areas: electric machinery and control; electronics; instrumentation; dielectric and magnetic materials. Periodicals and reference sources are adequate for extensive research in all fields of civil engineering.

The College of Engineering Library is an excellent reference source of both periodicals and books in the field of mechanical engineering. New books are continuously being purchased which keeps the reference source abreast of the times in all branches of mechanical engineering.

N. C. State

The N. C. State College Library has complete holdings of all journals, etc., dealing with engineering.

U. N. C.

The Sanitary Engineering Department of the School of Public Health does not maintain its own library but is served by the Library of the Division of Health Affairs.

3. Special Facilities and Equipment.

Duke

Civil

Special facilities include: materials testing laboratory, structural models laboratory, complete soil mechanics laboratory, with soil sampling equipment with mechanical auger and hydraulic core driller, concrete testing laboratory, highway-materials laboratory, sanitary engineering laboratory completely equipped for performing all analyses of water supply and sewage, shop facilities, drafting and reproduction facilities.

Special equipment includes: Beckman Spectrophotometer, Beckman glass electrode pH meter, Thomas copper water bath, working model of sand filter, Beggs Deformeter: photo-elasticity apparatus; complete equipment for surveying and mapping including optical transit, theodolite, precise level and equipment for standardizing tapes; SR-4 strain gage equipment; 50,000; 60,000; 150,000; and 300,000-lb. capacity testing machines; 50,000 lb. Morehouse Proving Ring; CBR soil testing apparatus; triaxial shear apparatus; and Acker soil sampling kit.

Electrical

Special facilities include: High voltage laboratory; illumination laboratory; servo-mechanisms laboratory; electric heating test installation; electronics instrumentation; shop facilities; photographic dark room; drafting and reproduction facilities.

Duke

Special equipment includes: 500,000-volt, 9,375-watt-second impulse generator; 1000,000-volt, 60-cps test equipment; high-voltage cathode-ray oscillograph; six-element oscillograph; high-speed motion picture camera; synchronous sine-wave generator; synchronous harmonic generator set; low-frequency servo-mechanism signal generator; electric heating test equipment; sound recording equipment.

Mechanical

Special facilities include: a well instrumented model steam power plant, a machine shop, wood working shop, and welding shop with full-time machinist, a calorimeter room for testing heating and refrigerating equipment, a low temperature research laboratory, a hydraulics laboratory, and the usual tools, instruments and test equipment.

Special equipment includes: research grade microscope, photomicrographic equipment, darkroom, specimen mounting and polishing equipment, polariscope, electromagnet, vacuum pumps, low temperature liquid storage vessels, other low temperature special instruments.

N. C. State

Engineering Research

General facilities and equipment to serve the School of Engineering:

Precision Machine Shop - Facilities for construction and repair of scientific equipment.
Minerals Research Laboratory, Asheville, N. C. - Complete facilities for mineral beneficiation.
High Voltage Laboratory - AC 60-cycle, 150 kv test set.
DC 50 kv high voltage source.
Impulse generator with a cathode ray oscillograph.
A transient analyzer.
A high resistance bridge.
A 15 kv AC bridge.

N. C. State

Microscope and X-Ray Laboratories -

RCA Universal electron microscope.
Vacuum evaporation outfit.
Norelco X-Ray diffraction-geiger spectrometer outfit.
GE XRD 3 X-Ray diffractions outfits.
240 KVA X-Ray radiography unit.
140 KVA X-Ray radiography unit.

Pyrochemical Laboratories -

Gas and electric furnaces for temperatures up to 400 F.
High temperature load testing equipment.
Hydraulic presses up to 50-ton capacity.
Extrusion machinery.
Dielectric testing equipment.
Annealing furnaces.
Materials reduction equipment (crushing grinding and pulverizing machinery).
Automatic temperature controllers and recorders.

Metallurgical Laboratories -

Bausch and Lomb research model metallograph.
Model L Macrograph.
Muffle, tub and pot furnaces for heat testing.
6 KW ajax induction melting furnaces.
Hardness testers (Rockwell and Vickers).
Size 0 Whiting cupola.

Electronics Laboratories.
Experimental Stress Analysis Laboratory.
Large light weight aggregate pilot plant.

Chemical Engineering

Fifteen-gallon blaw-knox pilot plant.
Laboratory equipped with 10 recording potentiometers suitable for making measurements in the range from below 0 to 2500 F, and controlling within this same range. Presently set up for measurements of thermal properties of materials.
Pulse Column.
Liquid-Liquid extraction equipment suitable for studies on efficiency extraction.
202 Tenius Olsen testing machine for compression, tensile and diffraction measurements on plastics, wood, metal, housed in an air conditioned room.

N. C. State

Small tensile testers.
Precision refractrometer for measuring refractive index of liquids to 5 decimal points.
Blackmon ultra-violet spectrometer.
Blackmon Model B Spectrophotometer.
18" x 3' stainless steel continuous rotary filter with string discharge.

Civil Engineering

Complete sanitary engineering laboratory facilities for the study of waste disposal problems and water treatment.
Materials testing laboratory including: A 300,000 capacity Southward compression testing machine; a 120,000 lb. capacity Baldwin testing machine; a 60,000 lb. capacity Southward universal testing machine; Charpy-Izod impact testing machines; Rockwell hardness testing machines; 3 Krouse fatigue testing machine; a 200,000 lb. capacity Olsen high speed tension testing machine; complete electronic and mechanical precision measuring instruments.

Electrical Engineering

Microwave Laboratory - Measurements of transmission characteristics in the frequency range 9000 megocycles (3 centimeter wave length) 3000 megocycles (10 centimeter wave length).
Communications Laboratory.
Industrial Electronics Laboratory.
Electronics Laboratory - Vibration and sound intensity measuring equipment in the audio frequency range.

Mechanical Engineering

Aeronautics Laboratory - single return closed throat wind tunnel with 46 x 42 working section; supersonic blow-down tunnel equipped for schlieren and shadowgraph photography.
Heating and air conditioning laboratory - An experimental cold room capable of reaching and holding temperatures down to -60 F.
Power laboratories including internal combustion engines, steam and gas turbines, other propulsion apparatus and associated equipment.
Machine design laboratory - Dynamic and static balancing machine, strain measure, photoelastic equipment, bearing and lubrication testing facilities.

N. C. State

Mechanical Engineering (Agricultural)

Individual temperature humidity controlled rooms for studying curing environment on quality of products such as tobacco, peanuts, and hay.
Well equipped research machine shop which employs four full-time mechanics.
Time-lapse movie equipment, and a high speed motion picture camera and controls.

U. N. C.

Sanitary Engineering - School of Public Health

The Department has laboratories and equipment for research and investigations in connection with environmental sanitation, industrial hygiene, water supply and treatment, and waste treatment and disposal. The laboratory equipment includes all of the necessary routine instruments and apparatus such as constant temperature baths, analytical balances, polarograph, spectrophotometers, pH meters, dust sampling equipment, gasometers, microscopes, dark room with equipment for photomicrographs, etc.

4. Major Areas of Present Research Activity.

Duke

Civil

a. Flow and fracture of solids.
b. Plastic design of structural steel.
c. Design of thin structural shells.
d. Design of hydraulics laboratory facilities for investigation of flow in open channels.
e. A new method of analysis of statically indeterminate structures.

Electrical

a. Investigation of the mechanism of dielectric breakdown of plastic insulating materials under high voltage impulses.
b. Development of method for applying electric radiant heating to industrial processing of textiles.
c. Evaluation of ferromagnetic materials in terms of the harmonic content of associated magnetic field quantities.

Duke

d. Development of ultra-sonic flowmeter for measurement of blood flow in small arteries of brain.
e. Development of electromagnet for nuclear reaction experiments.
f. Development of electromagnet for low-temperature research.
g. Development of instrumentation for measurement of electrical properties of individual cells of biological tissue.

Mechanical

a. Cyclic magnetic cooling, Ranque (Hilsch) tubes, and gas liquefaction by means of Ranque tubes.
b. Investigation of flame propogation and temperatures in internal combustion engines.
c. Study of efficiencies of various types of internal combustion engine carburetors.
d. Construction of laboratory model gas turbine.
e. Investigation of detonation on pressures in internal combustion engines.
f. Development of special instrumentation for calorimeter room.

N. C. State

Ceramic

a. The use of vibration under low pressure in the forming of oxide and carbide refractory bodies.
b. Escape of fission products through layers of ceramic material.
c. Dielectric properties of ceramic materials.
d. Investigation of pyrophyllite refractories.

Chemical

a. Investigation of a radioactive tracer technique in a study of wall-adjacent velocities in a flowing fluid.
b. Method of measuring thermal properties of poor conductors.
c. Plate efficiency of fractionating columns.
d. Liquid-Liquid extraction.

Civil

a. Mechanism of adsorption by activated sludge.

N. C. State

b. Study of the mechanism of biochemical oxidation of solutions and colloidal suspension of organic matter.
c. Panama Canal Zone study.

Electrical

a. GRANPA (Graphical and Numerical Photoelectronic Analyzer).

Industrial

a. Furniture dimension stock from sub-standard logs.

Mechanical

a. The evaluation of domestic heating fuels.
b. Tests of lubricating oils.
c. Operation of medium speed diesel engines on heavy fuels.
d. Determination of valve wear and failures.

Mechanical (Agricultural)

a. Mechanization of farming operations, crop processing.
b. Arrange irrigation land preparation.

Metallurgy

a. The Permalloy problem.
b. An investigation of recrystallization under stress.

U. N. C.

Sanitary Engineering - School of Public Health

a. Dissociation of chlorine dioxide in solution.
b. Mechanism of coagulation in water.
c. Effect of oxygen tension on biological waste treatment.
d. Improved indicators for contamination of bathing waters.

III-A cont.

ENTOMOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	a. Smith, C. F. (Agr.)	Ph.D.	Professor Head of Department	Taxonomy.
	b. Brett, Charles H. (Agr.)	Ph.D.	Associate Professor	Ecology and Biology.
	c. Dogger, James R. (Agr.)	Ph.D.	Assistant Professor	Taxonomy and Biology.
	d. Farrier, Maurice H. (Agr.)	Ph.D.	Assistant Professor	Taxonomy.
	e. Gast, Robert T. (Agr.)	Ph.D.	Assistant Professor	Toxicology and Physiology.
	f. Guthrie, Frank E. (Agr.)	Ph.D.	Assistant Professor	Toxicology and Physiology.
	g. Kulash, W. M. (Agr.)	Ph.D.	Associate Professor	Biology and Taxonomy.
	h. Mistric, Walter J., Jr. (Agr.)	Ph.D.	Assistant Professor	Ecology.
	i. Mitchell, T. B. (Agr.)	Sc.D.	Professor	Taxonomy.
	j. Rabb, Robert L. (Agr.)	Ph.D.	Assistant Professor	Taxonomy and Biology.
	k. Townes, Henry K., Jr. (Agr.)	Ph.D.	Professor	Taxonomy.
	l. Turnipseed, G. F. (Agr.)	B.S.	Assistant Professor	Biology.

III-A cont. (Entomology)

2. Library Resources.

N. C. State — See statement in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

Special facilities include three temperature and humidity rooms used for the study of life history, biology, and toxicology of insects, and a pesticide laboratory equipped for chemical determinations of pesticide residues.

Special equipment includes spray towers and dust towers to administer controlled quantities of insecticides.

4. Major Areas of Present Research Activity.

N. C. State

a. Biology of insects, their taxonomy, ecology and physiology with emphasis on species that are common crop pests.
b. Toxicology and techniques of poison application.

EPIDEMIOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	a. McGavran, E. G. (Public Health)	M.D. M.P.H.	Professor Head, School of Public Health	Epidemiology and Public Health Administration.
	b. Cassel, John Charles	M.D. M.P.H.	Associate Professor	Epidemiology and Chronic Disease.

III-A cont. (Epidemiology)

2. Library Resources.

U. N. C.

a. Rosenau Library Department.
b. Division of Health Affairs Library.

3. Special Facilities and Equipment.

U. N. C.

Facilities adequate for carrying out investigations in areas of research pertinent to field.

4. Major Areas of Present Research Activity.

U. N. C.

a. Community Diagnosis.

EXPERIMENTAL MEDICINE

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Cannefax, George R. (Public Health)	B.S.	Instructor Serologist	Serology of Venereal Diseases.
	b. Case, James D. (Public Health)	[1]	Instructor	Not furnished.
	c. Doak, G. O. (Public Health)	Ph.D.	Associate Professor Assistant Director, V-D Experimental Lab. Organic chemist	Special Reference to Organometallic Compounds of Arsenic, Antimony, Bismuth, and Phosphorus.

[1] Not furnished.

III-A cont. (Experimental Medicine)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	d. Freedman, Leon D. (Public Health)	Ph.D.	Assistant Professor Organic Chemist	Special Reference to Organometallic Compounds of Arsenic, Antimony, Bismuth, and Phosphorus.
	e. Magnuson, Harold J. (Public Health)	M.D.	Director, V-D Experimental Laboratory	Bacteriology and Immunology with Special Reference to Venereal Diseases.
	f. McLeod, Charlotte P. (Public Health)	Ph.D.	Assistant Professor Bacteriologist	Bacteriology of Venereal Diseases.
	g. Portnoy, Joseph (Public Health)	Ph.D.	Assistant Professor Immunologist	Development of New Antigens for the Serological Testing Against Venereal Diseases.
	h. Tauber, Henry (Public Health)	Ph.D.	Associate Professor Biochemist	Enzymology.
	i. Thayer, James D. (Public Health)	Ph.D.	Assistant Professor Bacteriologist	Bacteriology of Venereal Diseases, Tuberculosis, Antibiotics and Chemotherapy.

2. Library Resources.

U. N. C.

The Department of Experimental Medicine has a small library of approximately 1500 volumes, devoted mainly to current journals of interest to members of this group.

III-A cont. (Experimental Medicine)

3. Special Facilities and Equipment.

U. N. C.

The Department of Experimental Medicine has approximately six laboratories fully equipped for general basic research in serology, bacteriology, and biochemistry. In addition, there is a small but adequately equipped radioactive research laboratory for conducting experiments at a low level of activity. There are two animal rooms with space for approximately 400 rabbits and several thousand small animals (mice, rats, etc.).

4. Major Areas of Present Research Activity.

U. N. C.

The research activities of the department are devoted almost entirely to basic research in the bacteriology, pharmacology, and serology of venereal diseases, particularly syphilis.

FORESTRY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Korstian, Clarence F.	Ph.D.	Professor Dean of School	Silviculture, Silvics, Seeding and Planting in Forestry Practice, and Forestry Policy.
	b. Anderson, Roger F.	Ph.D.	Associate Professor	Forest Entomology.
	c. Chaiken, Lee E.	M.F.	Associate Professor	Forest Management, Control of Undesired Vegetation, Silviculture of Southern Pines.

III-A cont. (Forestry)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	d.	Harrar, Ellwood S.	Ph.D.	Professor	Wood Anatomy, Timber Mechanics, Bonding and Fishing of Wood, Dendrology.
	e.	Johnson, Terry W.	Ph.D.	Assistant Professor	Forest Pathology.
	f.	Kramer, Paul J.	Ph.D.	Professor	Physiology of Forest Trees, Water Relations of Plants.
	g.	Ralston, Charles W.	Ph.D.	Assistant Professor	Soil and Growth of Forests, Soil Moisture Relationships, Physical and Chemical Analysis of Forest Soils.
	h.	Schumacher, Frances X.	B.S.	Professor	Forest Mensuration, Sampling Methods, Design of Forestry Experiments and Analysis of Data.
	i.	Stoltenberg, Carl H.	Ph.D.	Assistant Professor	Economics of Forestry.
	j.	Wackerman, Albert E.	M.F.	Professor	Forest Utilization, Seasoning and Preservation of Wood.
N. C. State	a.	Preston, R. J.	Ph.D.	Dean	Dendrology, Silvics.
	b.	Barefoot, A. C.	M.S.	Assistant Professor of Wood Utilization	Logging, Milling, Mechanical Properties, Statistics.

III-A cont. (Forestry)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	c. Bethel, J. S.	D.F.	Professor of Wood Technology and Director of Wood Products Laboratory	Gluing, Plywood, Quality Control, Timber Physics, Lumber Manufacture.
	d. Bryant, R. C.	Ph.D.	Professor of Forest Economics	Economics Markets, Valuation.
	e. Carter, R. M.	M.D.	Professor of Wood Technology	Wood Moisture, Kiln Drying, Wood Finishing, Merchandising.
	f. Hart, C. A.	M.S.	Technologist	Wood Properties, Gluing.
	g. Hitchings, R. G.	B.S.	Assistant Professor Pulp and Paper Technology	Pulping, Mill Equipment, Paper Technology, Paper Testing.
	h. Libby, C. E.	Che.	Professor of Pulp and Paper Technology	Pulp Technology, Paper Converting, Mill Management.
	i. Maki, T. E.	Ph.D.	Professor of Forest Management	Silvics, Soils, Management, Genetics.
	j. Miller, W. D.	Ph.D.	Associate Professor of Silviculture	Silviculture, Policy, Administration.
	k. Slocum, G. K.	M.S.	Professor of Forestry	Structure, Identification, Mensuration, Photogrametry.
	l. Wyman, L.	M.F.	Professor of Forest Utilization	Forest Products, Naval Stores, Logging, Mechanical Properties.

2. Library Resources.

Duke

The School of Forestry Library is located in the Biology Building. It has approximately 21,250 volumes and is probably the most complete collection of forestry material south of Washington, D. C. The Biology Library, containing over 30,000 volumes, is located in the same building, much of which material is basic or related to forestry.

N. C. State

Very complete holdings of periodicals and government publications.

3. Special Facilities and Equipment.

Duke

The Duke Forest--an outdoor laboratory of 7,500 acres of forested land adjacent to West Campus. Well equipped laboratories are available for work in forest entomology, wood anatomy and properties, timber mechanics, bonding of wood, seasoning and preservation of wood, wood-working, forest pathology, and forest-tree physiology. Two laboratories are equipped for advanced studies in physical and chemical analysis of forest soils. Greenhouse and cold frame space is available for growth of plants used in forestry research projects, refrigerated room, constant temperature rooms, laboratory equipped for work with radioactive isotopes, chamber for measurement of plant processes under controlled light and temperature conditions.

Kjeldahl apparatus for nitrogen determinations, pressure membrane apparatus, photo-electric colorimeter, forced draft drying oven, muffle furnaces, electrical devices for measuring soil moisture and reactions, evacuation equipment, and apparatus for determining soil permeability, controlled temperature cabinets for studying ecological relationships of forest insects, infrared gas analyzer, photo-electric device to measure leaf areas, Beckmann oxygen analyzer, Warburg apparatus, refractometer, water baths for work from freezing to 50°C., cryoscopic equipment, equipment for electrical measurements of soil moisture, conductivity bridge, galvanometers, potentiometers, Wiley mill, balances, laboratory equipment for chemical analyses of plant material, universal testing machines of 30,000 and 60,000 pounds capacity, weatherometer, constant humidity chamber, hot presses for bonding wood, cold press (for bonding), Olsen plywood testing machine, paint, varnish and lacquer spray booth, glossometer and other equipment necessary to evaluate wood finishes, new Standard dry kiln, pressure treating cylinder, vapor drying and solvent recovery cylinder and system.

N. C. State

Wood Products Laboratory--One of the most completely equipped wood research laboratories in the Country, including production machinery, gluing equipment, wood finishing equipment, conditioning rooms, testing equipment, dry kiln, saw mills, and veneer lathe.

The Pulp and Paper Laboratory is now under construction, and will include pulping, coloring, testing, and converting laboratories and a small paper machine.

Experimental Forests--Over 80,000 acres of forest land in the Coastal Plain and Piedmont located on five tracts.

Major Areas of Present Research Activity.

Duke

a. Physical properties of soil related to tree growth in wetland forest types.
b. The effect of soil flooding on the survival and juvenile growth of southern forest species.
c. Techniques of soil moisture regulation for increasing productivity of inundated forest lands.
d. Chemical properties of organic soils related to tree growth.
e. Soil properties related to the growth of planted pines.
f. Study of the effects of various combination of day and night temperatures on tree growth.
g. Measurements of photosynthesis and respiration of tree seedlings at various temperatures.
h. Study of physiological characteristics of some important hardwoods.
i. Study of the physiological processes which control tree growth in various environmental conditions such as shade, soil fertility, and soil moisture.
j. Chemical stabilization of wood.
k. Use of urea in seasoning oak.
l. Cause of latent checks in finished plywood assemblies.
m. Taxonomy of Mexican pines.
n. Vapor drying of refractory woods.
o. Epidemiology of yellow poplar die-back in North Carolina.
p. Financial aspects of forest management.
q. Forest land tenure in the South.
r. Ecological control of forest insects.
s. The development and growth prediction of even-aged pine stands.

Duke

t. Volume-weight relationships of loblolly pine.
u. Hardwood competition in pine stands and methods of reducing it with particular reference to conditions in the Piedmont.
v. Stimulation of seed production of pulpwood-size trees of loblolly pine.
w. Methods of thinning young forest stands in the Piedmont.
x. Initial cuttings in uneven-aged upland hardwood stands under management in Duke Forest.
y. Natural reproduction, methods of cutting, and other silvicultural treatments applicable to important forest types in the Piedmont.

N. C. State

a. Research in utilization of hardwoods.
b. Research on Longleaf Pine.
c. Research in silvicides and controlling size and composition of vegetation on right-of-way areas.
d. Research in fertilization of pine plantations.
e. Research in the economics of forest fire control.
f. Research in evaluation of polyvinyl glues.

GENETICS

1. Staff Personnel.

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	a.	Stephens, Stanley G. (Agr.)	Ph.D.	Professor Chairman Genetics	Theoretical Genetics.
	b.	Barham, Warren S. (Agr.)	Ph.D.	Associate Professor	Plant Genetics.
	c.	Blow, W. L. (Agr.)	M.S.	Instructor	Animal Genetics.
	d.	Cochran, Fred D. (Agr.)	Ph.D.	Professor	Plant Genetics.

III-A cont. (Genetics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	e.	Dillard, Emmett U. (Agr.)	Ph.D.	Assistant Professor	Animal Genetics.
	f.	Farthing, Barton R. (Agr.)	M.S.	Instructor	Animal Genetics.
	g.	Gerstel, Dan U. (Agr.)	Ph.D.	Associate Professor	Plant Cytogenetics.
	h.	Glazener, E. W. (Agr.)	Ph.D.	Professor, Head of Poultry Department	Animal Genetics.
	i.	Gregory, John H. (Agr.)	B.S.	Instructor	Plant Genetics.
	j.	Gregory, W. C. (Agr.)	Ph.D.	Professor	Plant Genetics.
	k.	Harvey, Paul H. (Agr.)	Ph.D.	Professor	Plant Genetics.
	l.	Haynes, Frank L., Jr. (Agr.)	Ph.D.	Associate Professor	Plant Genetics.
	m.	Jones, Guy L. (Agr.)	Ph.D.	Assistant Professor	Plant Genetics.
	n.	Legates, James Edward (Agr.)	Ph.D.	Professor	Animal Genetics.
	o.	Lewontin, Richard C. (Agr.)	Ph.D.	Assistant Professor	Plant Genetics.
	p.	Loe, Robert H. (Agr.)	M.S.	Instructor	Plant Genetics.
	q.	Mann, Thurston J. (Agr.)	Ph.D.	Professor	Plant Genetics.
	r.	Morrow, E. B. (Agr.)	M.S.	Professor	Plant Genetics.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	e. Dilland, Emmett U. (Agr.)	Ph.D.	Assistant Professor	Animal Genetics.
	f. Fertshing, Barton R. (Agr.)	M.S.	Instructor	Animal Genetics.
	g. Gerstel, Dan U. (Agr.)	Ph.D.	Associate Professor	Plant Cytogenetics.
	h. Gilmanser, R. W. (Agr.)	Ph.D.	Professor, Head of Zoulogy Department	Animal Genetics.
	i. Gregory, John H. (Agr.)	B.S.	Instructor	Plant Genetics.
	j. Gregory, W. C. (Agr.)	Ph.D.	Professor	Plant Genetics.
	k. Harvey, Paul H. (Agr.)	Ph.D.	Professor	Plant Genetics.
	l. Hayman, Frank L., Jr. (Agr.)	Ph.D.	Associate Professor	Plant Genetics.
	m. Jones, Guy L. (Agr.)	Ph.D.	Assistant Professor	Plant Genetics.
	n. Legates, James Edward (Agr.)	Ph.D.	Professor	Animal Genetics.
	o. Lewontin, Richard C. (Agr.)	Ph.D.	Assistant Professor	Plant Genetics.
	p. Lee, Robert H. (Agr.)	M.S.	Instructor	Plant Genetics.
	q. Mann, Thurston J. (Agr.)	Ph.D.	Professor	Plant Genetics.
	r. Morrow, E. B. (Agr.)	M.S.	Professor	Plant Genetics.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	s. Pope, Daniel T. (Agr.)	Ph.D.	Associate Professor	Plant Genetics.
	t. Pou, John W. (Agr.)	Ph.D.	Head of Department of A. I.	Animal Genetics.
	u. Schramm, Robert J., Jr. (Agr.)	Ph.D.	Assistant Professor	Ornamental Genetics.
	v. Smith, Benjamin W. (Agr.)	Ph.D.	Associate Professor	Plant Cytogenetics.
	w. Stewart, H. A. (Agr.)	Ph.D.	Professor Assistant Director Experimental Station	Animal Genetics.
	x. Underwood, Von H. (Agr.)	B.S.	Instructor	Fruit Genetics.
	y. Williams, C. F. (Agr.)	M.S.	Associate Professor	Plant Genetics.

2. Library Resources.

N. C. State

See statement in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

Special equipment includes greenhouse, experimental garden (lacre) with irrigation facilities, and temperature controlled stock room, equipped with precision temperature controlled cabinets.

PRACTICAL PERMANENCE COUNTRYSIDE CAMPAIGNS
TRAFFORDS LANDFILLS' ANY PERMANENT COUNTRYSIDE WORK LOCAL ALTERNATIVE WORK
GREENTY ADDITIONAL POSITIVE TRANSPORTS' ENVIRONMENTAL RESEARCH (FICHA) WORK

1.	GREENTY LANDFILLS' AND CONTROLS*			
	GAS ATTRACTS 1.' SECRET TOWARDS PARTNERS, LOS M' C' SPACE CATCHES*			
2.	TOWARDS REGISTERED*			
A.	MILITARY C' L' (YES*)	M'B'	PROSECUTORS LIGHTSPEED	STEAM MEASURES*
	(YES*)			
B.	CONTROLS' AND R'	P'D'	DIRECTORS	STEAM GENERATES*
			ENVIRONMENTAL REGULATION	
C.	GENERAL' R' Y' (YES*)	LM'D'	PROSECUTOR	FUTURE CONTROLS*
	(YES*)		PRESERVE DIFFERENCE	
D.	SECTION' CONTROLS R'	LP'D'	GAS ATTRA LIGHTSPEED	STEAM CONSERVATION*
	(YES*)			
E.	COMPANY' POWERS L' C'	LM'D'	PRESERVE PROSECUTOR	CONTROLLING DEVELOPER*
			OF Y' Z'	
F.	FOOT' TOWN R' (YES*)	LP'D'	BEND OF DEPARTMENT	FUTURE C-REACTOR*
G.	POWER' DEVELOP Z' (YES*)	LM'D'	PRESERVE LIGHTSPEED	STEAM GENERATES*

INTERVENED	LEGAL REVIEWED	DECIDED LEGALLY REVIEWED	POSITION	SECRETARY CONSERVATION

III-1 COMP' (DEVELOPER)

4. Major Areas of Present Research Activity.

N.C. State

a. Fundamental studies on the genetic structure of populations--theoretical; experimental (corn, drosophila, mice).
b. Application of principles developed in fundamental studies on the genetic structure of populations to specific breeding problems in corn, cotton, tobacco, vegetables, fruit crops, legumes, dairy cattle, swine, and poultry.
c. Cytogenetics of species hybrids--cotton; rumex spp.
d. Utilization of species hybrids in breeding programs--cotton; tobacco; potatoes.
e. Radiation genetics--effects of x-rays on plants; applications to breeding in peanuts; comparative studies of various forms of radiations on insect development (includes x-rays, neutrons, radioactive isotopes).
f. Cooperative programs with Plant Pathology in incorporation of disease resistance into breeding stocks.

GEOGRAPHY AND GEOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke			Geology	
	a. Berry, Edward Willard	Ph.D.	Professor Chairman of Department	Paleobotany-fossil Spores and Paleonotology, Especially of Coal and Oil.
	b. Furbish, William J.	M.S.	Instructor	Fractography, Catalystic Mineral Identification Procedures.
	c. Heron, Stephen D., Jr.	M.S.	Assistant Professor	Stratigraphy, Especially Coastal Plain.

				CONCEPT ALERTS'
6'	GROUP' PLACEMENT' IN' THE' N'B'	VENTRAL ENTOPEDUNCULAR		SELECTIONAL' PERCEPTIVE
				BIOCHEMICAL'
				SPARSE' TOPOGRAPHICALLY
7'	ENTERING' NEITHER' 1'	NTS'	INTERNAL	BIOCHEMICAL' CONTRIBUTE
				OTI'
				PERSPECTIVE OF GREY AND
			CONTROL OF INTERNAL	STORES AND PSYCHOLOGICAL'
8'	DRIVE' SENSE NEITHER	LO'D'	INTERNAL	ATTRIBUTES-LOWER

		GENERAL		
TERRITORY	SPECIFIC TARGET	SCALES	CONTROL	CONCEPT CONTRIBUTES
		PERCEPT		
		ATTRIBUTE		

7' SPECIE INTERCONNECT'

CONCEPTUAL AND GEOTOPIC

1' INTERPRETATION THAT DEMONSTRATE SPECIES'

2' CONCEPTUAL STRATEGY WHICH STRESS EXPLICITLY TO TUNCOLOGY(TOU OF GIVEN
WHICH (PRIMARY X-CELL' DEMONS' ANTICIPATE TRIGGER)'
INTERNAL' CONCEPTUAL ANALYSIS OF ACTIVE LOTES OF INSPECTORS ON PLACES OF ATTRIB-

3' PERCEPTUAL REPORTS--EFFECTS OF X-CELL ON STRUCTS' ATTRIBUTE TO PRESENTS TO

4' NOTIFICATION OF ABSENTS PLACING TO PRESENTS INSPECTORS--SCALES' CONTROL NECESSARY'

5' CATEGORIZATION OF ALWAYS PLACING--CONCEPT' LINKS ARE'
SCIENCE' ACCEPTING' TIME' ABOUT' TOPICS' GREY' REALTY' SAME' AND PONTEN'
STRUCTURE OF INSPECTORS TO PRESENTS ATTRIBUTES BLOCKED TO PLAN' SCIENCE'

6' VERIFICATION OF INTERPRETATIONS (PRACTICE) TO FUNDAMENTAL ASPECTS ON THE SCIENCE
ATTRIBUTES) (CONT' CONCEPTUAL' MOD)'

7' FUNDAMENTAL SCALES ON THE CONCEPTS SCIENCE OF INSPECTORS--TUNCOLOGY'

R'O' LEVEL

8' TOTAL STATE OF PERCEPT CONCEPTUAL VARIATE'

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	a. Parker, John M. (Engin.)	Ph.D.	Professor	Geology.
U. N. C.				
			Geography	
	a. Emory, Samuel Thomas	Ph.D.	Professor Chairman of Department	Historical and Political Geography.
	b. Basile, David Giovanni	M.A.	Assistant Professor	Latin America.
	c. Gibson, Joshua Sullivan	Ph.D.	Associate Professor	Land Use.
			Geology	
	a. Ingram, Roy Lee	Ph.D.	Associate Professor	Clay Minerals, X-ray and Micro-photography, Photogrammetry.
	b. MacCarthy, Gerald R.	Ph.D.	Professor	Geophysics, Especially Seismology and Permafrost Studies.
	c. Mann, Virgil Ivor	Ph.D.	Associate Professor	Mineralogy, Especially Iron and Uranium Ores.
	d. Wheeler, Walter Hall	Ph.D.	Assistant Professor	Micropaleontology.
	e. White, William A.	Ph.D.	Professor	Geomorphology.

2. Library Resources.

Duke

Library part of General Library. Major English language periodicals complete from 1936; few with longer files. Extensive research material in most branches of Geology. Good personal files in Paleobotany and associated fields.

Date	Subject	Degree	Position	Department
	3. Italian Research.			
	e. Antoni Antiteu A.	Ph.D.	Professor	Geochemistry.
	d. Mineral Analysis Lab.	Ph.D.	Assistant Professor	Microbiochemistry.
	c. Miss Light Lab.	Ph.D.	Associate Professor	Lab. and Structure Chemistry Analytical Research
	b. Mercurialia Organic R.	Ph.D.	Professor	Lab. Spectra Lab. Chemistry Non Ferrous Organic Radio-Activity
	a. Fermi Hot Lab.	Ph.D.	Associate Professor	Radiochemistry. Lab. Atomic-Biochemistry Chem. Analytic X-Ray
	Geology			
	c. Gibson Sodium Analysis	Ph.D.	Associate Professor	Lab. Lab.
	b. Beetle Data Storage	M.A.	Assistant Professor	Data Analyzer.
	a. Flora Record Index	Ph.D.	Professor	Department of Paleontology Geology. Mineralogy and Petrology
	Geology			
	3. Fermi Lab. M. (Right)	Ph.D.	Professor	Geology.

Application	Space Allotted	Student Assigned	Equipment	Special Conditions
	M. C. Space			
	M. C.			

III-A comp. (Geology and Geology)

N. C. State

See statement in "General Library Resources" for N. C. State College.

U. N. C.

The Departmental Library has 21,667 volumes, 30,484 maps, and 492 uncataloged pamphlets. All periodicals requested by the staff are available.

3. Special Facilities and Equipment.

Duke

No special facilities, although well equipped for usual geological investigations.

N. C. State

Facilities adequate for carrying out investigations in areas of research pertinent to field.

U. N. C.

Special facilities include a well equipped photographic dark-room; a Cartographic room with six special desks and a pantograph.

Special equipment: Hayes X-ray Diffraction unit with powder cameras; Ro-Tap sieve shaker; Hussey-Campbell end-over-end sediment shaker; International Centrifuge size No. 2; Abrams contour finder; Abrams "Lazy-Dazy" triangulator kit for aerial photographs; telescopic alidades; Precision surveying altimeters; three seismometers; 1 triple recording drum for the seismometer; 1 precision clock for the seismometer, 3 recording galvanometers; 1 magnetometer; 1 "Megger"; 1 dip needle; 1 potentiometer; 1 portable geiger counter; 1 ultraviolet lamp; 6 microscopes (2 convertible to reflection scopes); 1 reflection goniometer; 1 Universal stage (5 axis); 1 refractometer - a) high scale, b) gem; 1 monochrometer; 1 small mineral spectrograph; 1 research microscope and light; 1 arc lamp; 9 binocular microscopes; 320 air-photo index sheets (Southeast USA); 1 Leica camera; 1 motion picture projector; 3 lantern slide projectors; adequate collection of wall maps.

4. Major Areas of Present Research Activity.

Duke

a. Rare mineral investigation.
b. Study of basal Cretaceous formation(s) of the North Carolina Coastal Plain.
c. Study of fossil coal spores of Africa south of Sahara.

III-A cont. (Geography and Geology)

N. C. State

No data furnished.

U. N. C.

a. Land use in the Southeast.
b. Geomorphology of the Southern Atlantic Coastal Plain.
c. Composition of Clay Minerals in the Cape Fear Valley.
d. Permafrost.
e. Iron and Uranium Deposits.
f. Lane use in Ecuador.

HEALTH EDUCATION

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	a. Morgan, Lucy Shields (Public Health)	Ph.D.	Professor Head of Department	Community Organization School Health, and Communications.
	b. Kent, Rosemary May (Public Health)	Ph.D.	Associate Professor	Community Organization School Health, and Communications.
	c. Mast, Elta Mae (Public Health)	M.S.P.H.	Associate Professor	Community Organization School Health, and Communications.
	d. Smith, Vaughn (Public Health)	Ph.D.	Associate Professor	Community Organization School Health, and Communications. Field (Indian Project).
	e. Tyler, Eunice N. (Public Health)	Ph.D.	Professor	Community Organization School Health, and Communications.

III-A cont. (Health Education)

2. Library Resources.

U. N. C.

See statement on Division of Health Affairs Library in "General Library Resources" for the University of North Carolina. Departmental Library in Health Education Workshop.

3. Special Facilities and Equipment.

U. N. C.

Health Education Workshop includes laboratory equipment and facilities adequate for carrying out investigations in areas of research pertinent to field.

4. Major Areas of Present Research Activity.

U. N. C.

a. Community organization in rural areas.
b. Evaluation of Health Education materials.

MARKETING

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	a. Homme, Henry A. (Agr.)	M.A.	Associate Professor	Dairy Marketing.
	b. King, Richard A. (Agr.)	Ph.D.	Associate Professor	Fruit and Vegetable Marketing.
	c. Martin, Lee (Agr.)	Ph.D.	Associate Professor	Grain Marketing.
	d. McPherson, Woodrow W. (Agr.)	Ph.D.	Professor	Production Economics and Marketing.

III-A cont. (Marketing)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	e. Roberts, W. M. (Agr.)	Ph.D.	Professor	Dairy Products.
	f. Williamson, J. C., Jr. (Agr.)	M.S.	Assistant Professor	Livestock Marketing.

2. Library Resources.

N. C. State

See statement in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

Facilities adequate for carrying out investigations in areas of research pertinent to the field of Marketing.

4. Major Areas of Present Research Activity.

N. C. State

a. Factors affecting quality of products.
b. Consumer reaction.
c. Systems of marketing and theoretical economic appraisal.

MATERNAL AND CHILD HEALTH

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Chipman, Sidney S. (Public Health)	M.D.C.M.	Professor	Child Health.

III-A cont. (Maternal and Child Health)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	b. Rebentisch, Jean I. (Public Health)	M.A.	Associate Professor	Pediatric Nursing and Growth and Development.
	c. Gourley, Geraldine (Public Health)	M.S.	Associate Professor of Medical Social Work	Medical Social Work.

2. Library Resources.

U. N. C.

a. 90 volumes.
b. 300 pamphlets and reprints.

3. Special Facilities and Equipment.

U. N. C.

Facilities adequate for carrying out investigations in areas of research pertinent to field.

4. Major Areas of Present Research Activity.

U. N. C.

a. Tuberculosis casefinding procedures in children.

MATHEMATICS

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Gergen, John J.	Ph.D.	Professor Chairman of Department	Partial Differential Equations, Harmonic Functions, Fourier Series, Complex Variable.

III-A cont. (Mathematics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	b.	Bragg, Louis R.	Ph.D.	Instructor	Differential Equations, Integral Equations.
	c.	Bureau, Florent J.	Ph.D.	Visiting Professor	Function Theory, Partial Differential Equations.
	d.	Campbell, Sullivan G.	Ph.D.	Visiting Associate Professor	Numerical Analysis, Function Theory, Partial Differential Equations.
	e.	Carlitz, Leonard J.	Ph.D.	Professor	Theory of Numbers, Arithmetic of Polynomials and Power Series.
	f.	Dressel, Francis G.	Ph.D.	Professor	Partial Differential Equations.
	g.	Elliott, William W.	Ph.D.	Professor	Not furnished.
	h.	Hickson, Arthur O.	Ph.D.	Associate Professor	Not furnished.
	i.	McLeod, Robert M.	Ph.D.	Instructor	Theory of Entire Functions and Theory of Meromorphic Functions.
	j.	Mohat, John T.	Ph.D.	Instructor	Point Set Theory.
	k.	Pellicciaro, Edward J.	Ph.D.	Research Instructor	Differential Equations.
	l.	Pinkham, Roger S.	Ph.D.	Instructor	Transform Theory, Probability, Statistics.
	m.	Prosser, Reese T.	Ph.D.	Research Instructor	Functional Analysis.
	n.	Roberts, John H.	Ph.D.	Professor	Point-Set Topology, Integral Equations.

DATE				
INVESTIGATOR	SPECIE RECEIVED	DEPTH FEMALE MALE	SUBSTRATUM	SCIENTIFIC NOMENCLATURE
	P. SCHEER' TONTE R.	1M'D'	TUBIFICIDAE	DEGLEMENTIST NOMENCLATURE INVESTIGATOR
	G. BURGEN' ATOLLEN T.	2M'D'	ATRATINE BLOGEBECK	DEGLEMENTIST NOMENCLATURE ENGLISH LEGEND' LEGIST
	G. DEWDNEY' SPITTLEN C.	1M'D'	ATRATINE VERSCHIEDE BLOGEBECK	DEGLEMENTIST NOMENCLATURE ENGLISH LEGEND' LEGIST VERSCHIEDE'
	D. CONLIFFE' TRUMPET T.	1M'D'	BLOGEBECK	DEGLEMENTIST NOMENCLATURE ENGLISH LEGEND' LEGIST VERSCHIEDE' LEGEND OF SUNDERS'
	D. DEWDNEY' TRUMPIN C.	1M'D'	BLOGEBECK	DEGLEMENTIST NOMENCLATURE LEGEND OF SUNDERS'
	E. STEPHEN' MILTEN R.	1M'D'	BLOGEBECK	ANE LONGSPEE'
	D. ITEMEN' VALEN C.	2M'D'	VERSCHIEDE BLOGEBECK	NEW LONGSPEE'
	I. MOINOT' TOMBE M.	2M'D'	TUBIFICIDAE	NOMENCLATURE BRIGHTWELL'S 4TH EDITION OF LEGEND OF SUNDERS
	J. MOINOT' TOMBE T.	1M'D'	TUBIFICIDAE	LEGEND OF SUNDERS
	K. MOINOT' TOMBE T.	1M'D'	VERSCHIEDE TUBIFICIDAE	DEGLEMENTIST NOMENCLATURE
	T. MOINOT' TOMBE T.	1M'D'	TUBIFICIDAE	LEGEND OF SUNDERS
	P. SCHEER' TONTE R.	1M'D'	TUBIFICIDAE	DEGLEMENTIST NOMENCLATURE INVESTIGATOR

III-V comp. (Nematodes)

III-A cont. (Mathematics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	o.	Shoenfield, Joseph R.	Ph.D.	Assistant Professor	Mathematical Logic.
	p.	Swift, George H., Jr.	Ph.D.	Instructor	Theory of Measure and Topology.
	q.	Thomas, Joseph M.	Ph.D.	Professor	Differential Geometry, Partial Differential Equations, Nomography.
	r.	Warner, Seth L.	Ph.D.	Research Instructor	Topological Algebra.
N. C. State	a.	Fisher, Hilbert A. (Engin.)	M.S.	Professor Head of Department	Mathematics.
	b.	Bullock, Robert C. (Engin.)	Ph.D.	Professor	Mathematics.
	c.	Cell, John W. (Engin.)	Ph.D.	Professor	Mathematics.
	d.	Clarkson, John M. (Engin.)	Ph.D.	Professor	Mathematics.
	e.	Levine, Jack (Engin.)	Ph.D.	Professor	Mathematics.
	f.	Mumford, Carey G. (Engin.)	Ph.D.	Professor	Mathematics.
	g.	Nahikian, Howard M. (Engin.)	Ph.D.	Professor	Mathematics.
	h.	Park, Hubert V. (Engin.)	Ph.D.	Professor	Mathematics.
	i.	Winton, Lowell S. (Engin.)	Ph.D.	Professor	Mathematics.

III-A cont. (Mathematics)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	a. Whyburn, William M.	Ph.D.	Kenan Professor Chairman of Department	Differential Systems.
	b. Brauer, Alfred T.	Ph.D.	Professor	Algebra and Number Theory.
	c. Browne, Edward T.	Ph.D.	Professor	Matrix Algebra.
	d. Cameron, Edward A.	Ph.D.	Professor	Abstract Algebra.
	e. Garner, Lofton L.	A.M.	Associate Professor	Difference Equations.
	f. Hill, M. A., Jr.	A.M.	Professor	Mathematical Statistics.
	g. Hobbs, Allan W.	Ph.D.	Professor	Applied Mathematics.
	h. Hoyle, Vinton A.	Ph.D.	Professor	Tensor and Vector Analysis.
	i. Jones, F. Burton	Ph.D.	Professor	Point-Set Topology.
	j. Lasley, John W., Jr.	Ph.D.	Professor	Geometry.
	k. Linker, J. Burton	Ph.D.	Professor	Mathematics of Investment.
	l. MacNerney, John S.	Ph.D.	Assistant Professor	Analysis.
	m. Mackie, Ernest L.	Ph.D.	Professor	Calculus of Variations.
	n. Mann, W. Robert	Ph.D.	Associate Professor	Applied Mathematics.
	o. Trimble, Ralph M.	S.M.	Professor	Civil Engineering.
	p. Wall, Drury W.	Ph.D.	Assistant Professor	Matrix Algebra.
	q. Winsor, Arthur S.	Ph.D.	Professor	Geometry.

Q.	Kinsman, Ralph P.	Ex'D.	Professor	Economics
R.	Neff, Perry M.	Ex'D.	Associate Professor	Poetry Writing
S.	Lofgren, Lewis H.	S.M.	Professor	Staff Geologist
T.	Kuhn, A. Boyce	Ex'D.	Associate Professor	Political Science
U.	Kenyon, Eugene P.	Ex'D.	Professor	Dean of Women
V.	Mitchell, John P.	Ex'D.	Assistant Professor	Sociology
W.	Fraser, J. Douglas	Ex'D.	Professor	Theatre Fire Marshal
X.	Tobias, John M., Jr.	Ex'D.	Professor	Chemistry
Y.	Jones, A. Dwight	Ex'D.	Professor	Inter-Par Council
Z.	Hoffman, Edwin	Ex'D.	Professor	Journalism Sports Publicity
A.	Hopkins, Allen A.	Ex'D.	Professor	Industrial Engineering
B.	Hill, H. W., Jr.	V.M.	Professor	Mechanical Engineering
C.	Gardner, Richard P.	V.M.	Associate Professor	Electrical Engineering
D.	Cockroft, Stanley W.	Ex'D.	Professor	Graduate Fireman
E.	Blount, Edwin L.	Ex'D.	Professor	Health Fireman
F.	Warner, Philip L.	Ex'D.	Professor	Special Fireman and Runner
G.	Kingman, William P.	Ex'D.	Chairman of Industrial Engineering Professor	Differential Stream

D. R. C.

Instructor	Staff Member	Degree Earned Highest	Department	Special Responsibility

2. Library Resources.

Duke

The Mathematics Department and the Physics Department have a joint library housed in the Physics Building. The Mathematical part of the library is comprised of approximately 8,200 volumes. The University subscribes to 162 mathematical periodicals, including all the important ones.

N. C. State

The N. C. State College Library has complete holdings of all journals, etc., dealing with mathematics.

U. N. C.

There is a combined library for mathematics, physics, and mathematical statistics. This is housed in Phillips Hall where it is easily accessible to the three departments. Complete files of the more important mathematical journals and books are in the library. Current subscriptions include essentially all of the mathematical journals published here and abroad. In general, the mathematics library is fully adequate to support the research activity in the department. When missing items are needed, these are available from the Duke Library or through inter-library loans.

3. Special Facilities and Equipment.

Duke

Facilities adequate for carrying out investigations in areas of research pertinent to field.

N. C. State

Special facilities include a GEDA Analog Computer.

U. N. C.

The Department of Mathematics has seven desk calculators of latest types. Mr. Trimble has a good range of equipment used in surveying and in mechanical drawing. He also has a well-equipped laboratory for testing hardness of metals. Members of the department have access to the high-speed electronic computers at government laboratories with which they maintain active contacts.

4. Major Areas of Present Research Activity.

Duke

a. Differential equations, harmonic functions, Fourier series, complex variable.
b. Integral equations.
c. Function theory.
d. Numerical analysis.
e. Theory of numbers.
f. Arithmetic of polynomials and power series.
g. Theory of entire functions.
h. Theory of meromorphic functions.
i. Point set theory.
j. Transform theory, probability, statistics.
k. Functional analysis.
l. Point-set topology.
m. Mathematical logic.
n. Theory of measure.
o. Differential geometry, nomography.
p. Topological algebra.

N. C. State

a. Matrices with elements in a commutative ring and solution of simultaneous equations.
b. Study of spin stabilized rockets during burning.

U. N. C.

a. Applied mathematics.
b. Topology.
c. Algebra and theory of numbers.
d. Stieltjes integrals and Hilbert spaces.
e. Integral and differential equations.
f. Geometry.

MEDICINE

1. Staff Personnel

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Stead, Eugene A., Jr. (Med.)	M.D.	Professor Chairman of Department	Cardiovascular Problems.
	b. Callaway, J. Lamar (Med.)	M.D.	Professor	Dermatology.
	c. Deiss, William P. (Med.)	M.D.	Assistant Professor	Thyroid Hormones, Collagen.
	d. Engel, Frank L. (Med.)	M.D.	Associate Professor	Endocrine Control of Metabolism, Adrenal Cortex.
	e. Hendrix, James P. (Med.)	M.D.	Associate Professor	Autonomic Nervous System, Pharmacotherapy.
	f. Hickam, John B. (Med.)	M.D.	Associate Professor	Lung, Blood Gases, Cardiovascular.
	g. Hansen, O. C. E. (Med.)	M.D.	Professor	Allergy, Hematology.
	h. Heyman, Albert (Med.)	M.D.	Associate Professor	Neurology, Cerebral Blood Flow and Metabolism.
	i. Kerby, Grace P. (Med.)	M.D.	Assistant Professor	Arthritis, Collagen Diseases.
	j. Kempner, Walter (Med.)	M.D.	Professor	Hypertension, Arterio-schlerosis.

III-A cont. (Medicine)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	k. Kunkle, Charles E. (Med.)	M.D.	Professor	Neurology, Headache.
	l. Martin, Samuel P. (Med.)	M.D.	Associate Professor	Host Responses to Infection.
	m. Menefee, E. E. (Med.)	M.D.	Associate Professor	Pulmonary Diseases, Tuberculosis.
	n. Nicholson, William M. (Med.)	M.D.	Professor	Metabolic Diseases, Diabetes.
	o. Orgain, Edward S. (Med.)	M.D.	Professor	Cardiovascular Diseases, Hypertension.
	p. Persons, Elbert L. (Med.)	M.D.	Associate Professor	Rheumatic Diseases.
	q. Peschel, Ernst (Med.)	M.D.	Assistant Professor	Metabolism of Heart Muscle.
	r. Pfeiffer, John B. (Med.)	M.D.	Assistant Professor	Neurological Diseases.
	s. Ruffin, Julian M. (Med.)	M,D.	Professor	Gastrointestinal Absorption.
	t. Rundles, R. Wayne (Med.)	M.D.	Associate Professor	Cancer Chemotherapy.
	u. Tucker, William B. (Med.)	M.D.	Professor	Chemotherapy of Tuberculosis.
	v. Warren, James V. (Med.)	M.D.	Professor	Cardiovascular Physiology, Fainting.

III-A cont. (Medicine)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Allen, James Norman (Med.)	M.D.	Instructor	Neurologic Medicine.
	b. Barnett, Thomas B. (Med.)	M.D.	Assistant Professor	Pulmonary Disease.
	c. Burnett, Charles H. (Med.)	M.D.	Professor	Metabolic Disease.
	d. Craige, Ernest (Med.)	M.D.	Associate Professor	Cardiology.
	e. Donovan, Daniel L. (Med.)	M.D.	Instructor	General Medicine.
	f. Farmer, Thomas W. (Med.)	M.D.	Professor	Neurology.
	g. Fischer, Janet J. (Med.)	M.D.	Instructor	General Medicine and Microbiology.
	h. Gottschalk, Carl W. (Med.)	M.D.	Assistant Professor	General Medicine and Cardiology.
	i. Jones, David P. (Med.)	M.D. M.R.C.P.	Assistant Professor	Neurology.
	j. Palmer, Jeffress G. (Med.)	M.D.	Assistant Professor	Hematology.
	k. Sessions, John T. (Med.)	M.D.	Assistant Professor	GI.
	l. Sorrow, John M. (Med.)	M.D.	Instructor	General Medicine and Cardiology.

III-A cont. (Medicine)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. T. S.				
a.	Allen, James Norman (Med.)	M.D.	Instructor	Neurologic Medicine.
b.	Bartell, Thomas R. (Med.)	M.D.	Assistant Professor	Pulmonary Disease.
c.	Bennett, Charles R. (Med.)	M.D.	Professor	Metabolic Diseases.
d.	Crelin, Bruce (Med.)	M.D.	Associate Professor	Cardiology.
e.	Donovan, Donald L. (Med.)	M.D.	Instructor	General Medicine.
f.	Karsner, Thomas W. (Med.)	M.D.	Professor	Neurology.
g.	Richter, Janet L. (Med.)	M.D.	Instructor	General Medicine and Nephrology.
h.	Robertson, Carl W. (Med.)	M.D.	Associate Professor	General Medicine and Cardiology.
i.	Sohma, David T. (Med.)	M.D. M.R.C.P.	Assistant Professor	Neurology.
j.	Tolmen, Frederick G. (Med.)	M.D.	Assistant Professor	Hematology.
k.	Zeppelin, John T. (Med.)	M.D.	Assistant Professor	Id.
l.	Sorrow, John M. (Med.)	M.D.	Instructor	General Medicine and Radiology.

III-A cont. (Medicine)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	m. Stall, Bernard G. (Med.)	M.D.	Assistant Professor	Radioisotopes.
	n. Taylor, Isaac M. (Med.)	M.D.	Assistant Professor	General Medicine.
	o. Welt, Louis G. (Med.)	M.D.	Professor	Metabolic Disease.
	p. White, Kerr L. (Med.)	M.D.	Assistant Professor	Psychosomatic Medicine.
	q. Woods, James W., Jr. (Med.)	M.D.	Assistant Professor	General Medicine and Cardiology.
	r. Young, Daniel T. (Med.)	M.D.	Instructor	General Medicine.

2. Library Resources.

Duke

See statement on Duke Hospital Library in "General Library Resources" for Duke University.

U. N. C.

See statement on Division of Health Affairs Library in "General Library Resources" for the University of North Carolina.

3. Special Facilities and Equipment.

Duke

Special facilities include laboratories for cardiac catheterization, pulmonary function studies, and measurement of steroid metabolism.

III-A Staff. (Medicine)

Organization	Staff Member	Highest Earned Degree	Position	Special Competence
A. N.C.	a. Smith, Gerhard O. (Med.)	M.D.	Assistant Professor	Tuberculosis.
	b. Taylor, Inez R. (Med.)	M.D.	Associate Professor	General Medicine.
	c. Weil, Louis O. (Med.)	M.D.	Professor	Essential Hypertension.
	e. White, Earl L. (Med.)	M.D.	Assistant Professor	Psychosomatic Medicine.
	f. Nicole, James W., Jr. (Med.)	M.D.	Assistant Professor	General Medicine and Cardiology.
	g. Young, Daniel T. (Med.)	M.D.	Instructor	General Medicine.

2. Library Resources.

Note: See statement on Duke Hospital Library in "General Library Resources" for Duke University.

Note: See statement on Medical Library in "General Library Resources" for the University of North Carolina.

3. Physical Facilities and Equipment.

Note: Physical Facilities include laboratories for medical examination, pulmonary function studies, and measurements of arterial hemodynamics.

Duke

Special equipment includes: continuous recording oximeters, Warburg apparatus for tissue metabolism, measuring devices for blood and pulmonary gases, electrophoretic apparatus, multi-channelled pressure records, treadmill, scaler and counter for radioactive systems.

U. N. C.

Special equipment includes: polarograph, pH meter (Cambridge), Osmometer for determining freezing points (Fishe), 7 colorimeters, 3 Van Slyke gasometric apparatuses, Sartorius balance and other balances, 5 flame photometers (Baird, Barcley, Weichselbaum and Perkin-Elmer), 3 centrifuges (International), microbalance (Christian Becker), heart perfusion outfit, spectrophotometer (Beckman, Model B), Electroencephalogram (Offner), 2 amplifiers (Offner), dual beam oscilloscope (Dumont), 2 stimulators (Grass), artificial respirator (Degelman), 3 strain-gauge arterial pressure transducers, operating diathermy machine, 3 visocardiettes (Sanborn), twin beam cardiette and pulse wave attachment for phonocardiography, 4-channel polyviso, x-ray fluoroscopy machine, ampex tape recorder, plastic heart models for teaching vectorcardiography, Aloe micromanipulator, Richards micromanipulator and accessories, Quartz rod illuminator, sterobinocular microscope, Statham transducers (2), 2 voltage stabilizers, 2 electro-manometers, 2 physiological pressure transducers and spare heads, strain gage amplifier.

4. Major Areas of Present Research Activity.

Duke

a. Effects of dietary therapy on vascular disease.
b. Role of adrenal cortex in regulation of metabolism.
c. Metabolism of acetones.
d. Metabolism of thyroid hormones.
e. Physiology of fainting.
f. Role of ground substance in disease.
g. Host response to infection and changes in enzyme-systems caused by infection.
h. Cancer chemotherapy.
i. Regulation of protein metabolism.
j. Regulation of the blood volume.
k. Cholesterol metabolism.
l. Physiology of congestive heart failure.
m. Mechanisms regulating breathing, and physical characteristics of the lungs.
n. Cerebral vascular disease.

U. N. C.

a. Research in physiology of renal tubules.
b. Investigation into the spontaneous electrical activity of isolated unanesthetized cortical gray matter in the cat.
c. Cooperative study of the effectiveness of l-Asparagine in control of seizures.
d. *In Vitro* studies of chemical toxins for larva migrans.
e. Studies in drug leukopenia.
f. Quinidine study.
g. Studies of the factors regulating the internal and external exchange of electrolytes and water in health and disease.
h. The influence of plasma volume and oncotic pressure on the metabolism and excretion of electrolytes and water.
i. A study of drug therapy in hypertension.

MENTAL HEALTH

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	a. Howell, Roger William (Public Health)	M.D.	Professor	Individual and Community Mental Health.

2. Library Resources.

U. N. C.

All of those library resources available to students in the Division of Health Affairs, plus about 200 volumes available to students in this department's special library.

3. Special Facilities and Equipment.

U. N. C.

Special facilities include: direct working relationship with faculty of School of Public Health, and direct working relationship with community groups and facilities working in Mental Health Field.

4. Major Areas of Present Research Activity.

U. N. C.

a. A project in Family Relationships to Chronic Disease, including Mental Health, is being planned.
b. Community research activities through teaching program in the School of Public Health. This is largely focused upon the field of the Epidemiology of Mental Illness.

MICROBIOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
	a. Smith, David T. (Med.)	M.D.	Professor Chairman of Department	Tuberculosis and Fungus Research.
	b. Conant, Norman F. (Med.)	Ph.D.	Professor	Medical Mycology.
	c. Pope, Hilda (Med.)	Ph.D.	Assistant Professor	Metabolism of Bacteria.
	d. Poston, Mary (Med.)	A.M.	Associate	Brucellosis.
N. C. State				

See Bacteriology and Microbiology.

III-A cont. (Microbiology)

2. Library Resources.

Duke

The Duke Hospital Library has very complete files of all journals dealing with Microbiology.

3. Special Facilities and Equipment.

Duke

Special facilities include a special laboratory for serological test for syphilis and a special laboratory for preparation for autogenous vaccine.

Special equipment includes: Warburg apparatus, room incubators, refrigerated centrifuge, deep freeze, and lyophilizing apparatus for bacteria.

4. Major Areas of Present Research Activity.

Duke

a. Metabolism of tubercle bacilli.
b. ACTH and INH in experimental tuberculous meningitis.
c. Development of a method for immunizing animals against coccidioidomycosis which will have potential application for immunization of man.
d. Comparison of various antiseptics on patients prepared for operation.

NUTRITION

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	See Biochemistry and Nutrition.			

III-A cont. (Nutrition)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	a. Barrick, Elliott R. (Agr.)	Ph.D.	Professor	Animal Nutrition.
	b. Clawson, Albert J. (Agr.)	Ph.D.	Assistant Professor	Animal Nutrition.
	c. Goode, Lemuel (Agr.)	M.S.	Assistant Professor	Animal Nutrition.
	d. Hill, Charles H. (Agr.)	Ph.D.	Associate Professor	Poultry Nutrition.
	e. Hostetler, E. H. (Agr.)	M.S.	Professor	Animal Nutrition.
	f. Kelly, J. W. (Agr.)	Ph.D.	Associate Professor	Poultry Nutrition.
	g. Matrone, Gennard (Agr.)	Ph.D.	Professor	Mineral Nutrition.
	h. Murley, W. Ray (Agr.)	Ph.D.	Associate Professor	Dairy Nutrition.
	i. Ramsey, H. A. (Agr.)	Ph.D.	Assistant Professor	Animal Nutrition.
	j. Sherwood, F. E. (Agr.)	Ph.D.	Professor	Animal Nutrition and Bio-assay.
	k. Wise, George Herman (Agr.)	Ph.D.	Professor	Animal Nutrition.
U. N. C.				
	a. Bilancio, Dorothy (Public Health)	B.S.	Laboratory Technician	Analytical Chemistry.
	b. Bryan, A. Hughes (Public Health)	M.D.	Professor	Nutrition, Internal Medicine, Public Health, Biochemistry, Statistics.

III-A cont. (Nutrition)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	c. MacKinnon, C. Frances (Public Health)	M.S.	Associate Professor	Nutrition, Public Health, Dietetics.
	d. Sasser, Caroline A. (Public Health)	B.S.	Laboratory Technician	Analytical Chemistry.
	e. Smith, George Goss (Public Health)	M.P.H.	Research Assistant	Dietetics, Public Health.

2. Library Resources.

N. C. State

See statement in "General Library Resources" for N. C. State College.

U. N. C.

A department library containing 300 books and bound journals, a part of which are on loan from the library of the Division of Health Affairs.

3. Special Facilities and Equipment.

N. C. State

Special facilities include a modern creamery for research and processing of milk and milk products, a modern freezer locker and meats laboratory, an incubation laboratory with special equipment for incubation of poultry and turkey eggs, a poultry and turkey processing laboratory, a specially constructed fruit and vegetable processing laboratory for preservation of foods on pilot plant scale.

Special equipment includes a vacreater for removal of volatile material from milk, plant dializing and filtering equipment, electronic desalter and a recording nephelometer, a large freezer storage room, eight refrigerated rooms, small commercial size washing, sealing, pealing, slicing, dicing, pulping, and juicing equipment, kettles, exhauster, sealers and retorts for canning, dehydrators and pasteurization equipment, equipment for color evaluation by Nunsell system and a refractometer.

U. N. C.

a. A cordial working relationship with a two-county health department.
b. A well equipped biochemical laboratory.
c. Apparatus for statistical computations.
d. A department car for field trips.

4. Major Areas of Present Research Activity.

N. C. State

a. The role of food nutrients in animal metabolism.
b. Specific nutrient and mineral needs of various species.
c. Relative values of various feed ingredients.
d. Techniques for evaluation studies under normal environmental conditions.

U. N. C.

a. Relation of nutrition to the growth of children.
b. Levels of biochemical variables in the blood of groups of people--hemoglobin, alkalin phosphatase, ascorbic acid, Vitamin A.

OBSTETRICS AND GYNECOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
	a. Carter, Bayard (Med.)	M.D.	Professor Chairman of Department	Not furnished.
	b. Adkins, Trogler F. (Med.)	M.D.	Instructor in Obstetrics and Gynecology	Not furnished.
	c. Cherny, Walter B. (Med.)	M.D.	Instructor in Obstetrics and Gynecology	Not furnished.

III-A cont. (Obstetrics and Gynecology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	d. Creadick, Robert N. (Med.)	M.D.	Associate Professor of Obstetrics and Gynecology	Not furnished.
	e. Easley, Eleanor B. (Med.)	M.D.	Associate in Obstetrics and Gynecology	Not furnished.
	f. Graham, William A. (Med.)	M.D.	Instructor in Obstetrics and Gynecology	Not furnished.
	g. Hamblen, E. C. (Med.)	M.D.	Associate Professor of Obstetrics and Gynecology	Not furnished.
	h. Parker, Roy (Med.)	M.D.	Assistant Professor of Obstetrics and Gynecology	Not furnished.
	i. Pearse, Richard L. (Med.)	M.D.	Instructor in Obstetrics and Gynecology	Not furnished.
	j. Peete, Charles (Med.)	M.D.	Instructor in Obstetrics and Gynecology	Not furnished.
	k. Podger, Kenneth A. (Med.)	M.D.	Instructor in Obstetrics and Gynecology	Not furnished.
	l. Thomas, Walter Lee (Med.)	M.D.	Professor of Obstetrics and Gynecology	Not furnished.
	m. Turner, Violet (Med.)	M.D.	Assistant Professor of Obstetrics and Gynecology	Not furnished.
	n. von Roebel, Christa (Med.)	M.D.	Associate in Obstetrics and Gynecology	Not furnished.

III-A cont. (Obstetrics and Gynecology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Ross, Robert A. (Med.)	M.D.	Professor Chairman of Department	Dietary and Nutritional Studies in Pregnancy, Histologic Studies of Human Ovaries, Cytology.
	b. Flowers, Charles E. Jr. (Med.)	M.D.	Associate Professor	Utilization of Hypotensive Drugs.
	c. Leary, Deborah C. (Med.)	M.D.	Assistant Professor	"Fetal and Pregnancy Wastage," Problems in Sterility, Transmission and Culture of Cancer Cells.
	d. Palumbo, Leonard (Med.)	M.D.	Assistant Professor	Pregnant Diabetics, Cancer Cell Transportation, Refractivity of Cancer Cells.

2. Library Resources.

Duke

See statement on Duke Hospital Library in "General Library Resources" for Duke University.

U. N. C.

See statement on Division of Health Affairs Library in "General Library Resources" for the University of North Carolina. Current and bound periodicals and texts on the specialty of obstetrics, gynecology, endocrinology, and malignancy are available.

3. Special Facilities and Equipment.

Duke

a. Bacteriologic Laboratory.

Bacteriologic Laboratory of Department for special study of infections found in women. The development in research is in the study of fungi and of the anerobic infections. The relation of the type of infections to subsequent sterility is also an important phase of the investigation.

This Laboratory can manage not only some research problems but also can care for the usual clinical problems in the obstetric and gynecologic patients in Out Patient Clinic and in hospital beds.

b. Cytology Laboratory.

The main channels of research in this field have been directed toward the study of intraepithelial and invasive cancer in obstetric and gynecologic patients. There is much material accumulated for the study of the atypical cells found in exfoliative cytologic smears, with or without irradiation. Study of all fresh operative specimens is also well advanced.

In addition this laboratory is able to screen our clinic and hospital patients by routine smear preparations. At the present time our "slide library" holds a total of over 200,000 smears, etc.

c. Endocrine Laboratory.

The main channel of investigation in this laboratory has been the normal and abnormal physiology of the obstetric and gynecologic patients. Hormonal assays can be adequately done.

The study of endometria has always been a feature of the investigative work in this laboratory.

In addition to the investigative work the laboratory also does the routine and non-routine procedures on out-patients and in-patients.

The laboratory also works in close cooperation with the busy Infertility Clinic.

Duke

d. The Infertility Clinic.

This clinic has for years been functioning in the investigation of infertility. It serves not only as a "clinical" service to in- and out-patients, but also as a research unit in attempting to solve the problems of infertility and pregnancy wastage.

e. Routine Clinical Laboratory.

This laboratory serves the out-patients and in-patients. In addition to the large clinical load it also investigates the anemias and the toxemias in the obstetric patients.

U. N. C.

Beckman Spectrophotometer with ultraviolet attachments.

4. Major Areas of Present Research Activity.

Duke

In addition to the laboratory services for care of patients and for investigative work, the department is especially interested in:

a. The clinical and hormonal investigation of the toxemia of pregnancy.
b. The psychosomatic problems in obstetric and gynecologic patients. (In cooperation with the Department of Psychiatry)
c. Problems of Aging.
d. Evaluation of the cancer problem for our clinic population.
e. How to offer infertility service to patients who need it.
f. Fuller use of the special clinics offered, etc.
g. Broadening of the studies in endocrinology.
h. Efforts to obtain a well trained competent tissue chemist.

U. N. C.

a. I.B.M. recording on all pregnant females and newborns, reciprocal arrangement with Johns Hopkins, State University of New York and two other maternity centers. Review and evaluation of similar data in the State Board of Health Maternal and and Infant Welfare Division on all maternal deaths in North Carolina since 1946.

U. N. C.

b. An accurate and rapid method for evaluating the dosage, utilization, concentration and fate of the newer drugs. The study of electrolytes in pregnant patients with altered fluid balance. Method of evaluating the nutritional and metabolic state of preoperative and post-operative patients. Rapid detection of chemicals and poisons in body fluids. Possibility of evaluating the electro-potential of muscle and cancer cells and a spectrophotometric response of stained cancer cells.

c. Dietary habits, requirements in different economic strata, the dangers inherent in independent food selection, possibilities of harm to mother and fetus related to socio-economic habits. The effects of metabolic diseases on mother and fetus. The blood clotting mechanism related to maternal and infant morbidity and mortality.

d. Methods of early detection of genital cancer in the female; human and animal transmission, growth of the cancer cell, study of exfoliative cytology, the response of cancer cells to various agents, comparison of different factors influencing malignant cells, growth, development, and death.

PARASITOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	a. Larsh, John E., Jr. (Public Health)	Sc.D.	Professor Head of Department	Immunity Relations of Animal Parasites.
	b. Cort, William W. (Public Health)	Ph.D.	Research Professor	Germ Cell Cycle of Digenetic Trematodes.
	c. Hendricks, James R. (Public Health)	Ph.D.	Associate Professor	Immunity Relations of Animal Parasites.

III-A cont. (Parasitology)

2. Library Resources.

U. N. C.

Small departmental library which includes journals (8), books (five technical references), and mostly reprints (about 1,000).

3. Special Facilities and Equipment.

U. N. C.

Only those in general use for teaching (centrifuges, etc.).

4. Major Areas of Present Research Activity.

U. N. C.

a. Immunity studies on Trichinella spiralis.
b. Serologic studies on bird schistosome infections.
c. Studies on the germ cell cycle of various digenetic trematodes.
d. Monograph on paraganinuasis.

PATHOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
	a. Forbus, Wiley D. (Med.)	M.D.	Professor Chairman of Department	Chronic Infectious Diseases.
	b. Baker, Roger D. (Med.)	M.D.	Professor of Pathology	Diseases Produced by Fungi.
	c. Fetter, Bernard F. (Med.)	M.D.	Assistant Professor	Surgical Pathology.

III-A cont. (Pathology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	d. Margolis, George (Med.)	M.D.	Professor of Pathology	Diseases of the Central Nervous System.
	e. Morrison, Ashton B. (Med.)	M.D. Ph.D.	Associate in Pathology	Diseases of Metabolism, Particularly Carbohydrate Metabolism.
	f. Rogers, Stanfield (Med.)	M.D.	Assistant Professor of Pathology	Neoplastic Disease.
	g. Smith, Albert G. (Med.)	M.D.	Associate in Pathology	Surgical Pathology, Particularly Experimental Tumors.
U. N. C.	a. Brinkhous, K. M. (Med.)	M.D.	Professor Chairman of Department	Physiology of Blood Clotting, Hemorrhagic Diseases, Vitamin K, Vitamin E, and Muscular Dystrophy.
	b. Graham, J. B. (Med.)	M.D.	Associate Professor	Physiology of Blood Clotting, Genetics of Hemorrhagic Diseases.
	c. Hougie, C. (Med.)	M.D.	Instructor	Physiology of Blood Clotting, Diagnostic Procedures.
	d. Langdell, R. D. (Med.)	M.D.	Instructor	Physiology of Blood Clotting.
	e. Loring, W. E. (Med.)	M.D.	Assistant Professor	Cytology, Renal and Pulmonary Diseases.

III-A cont. (Pathology)

Institution	Staff Member		Highest Earned Degree	Position	Special Competence
U. N. C.	f. Penick, G. D.	(Med.)	M.D.	Assistant Professor	Physiology of Blood Clotting, Platelets.
	g. Swanton, M. C.	(Med.)	M.D.	Assistant Professor	Neurological Pathology, Exfoliative Cytology.
	h. Vennart, G. P.	(Med.)	M.D.	Instructor	Diagnostic Pathology and Liver Diseases.
	i. Wagner, R. H.	(Med.)	Ph.D.	Research Associate	Assay and Fractionation of Proteins Associated with Blood Clotting.

2. Library Resources.

Duke

The Department of Pathology has immediate access to the Duke Hospital Library which is comprehensive in its coverage of medical literature. There are no sources of information that are not available to us either through our own library or through loans from other medical libraries within easy reach of us, for example, the Surgeon General's Library in Washington, the Library of the New York Academy of Medicine in New York, etc. As mentioned above, a small departmental collection of books, journals, technical manuals, and so on, is maintained for immediate consultation during working hours in the laboratories. There are no limitations upon the availability of medical literature and our access to this body of library material.

U. N. C.

Access to the Library of the Division of Health Affairs provides American and foreign journals of pathology and related affairs. The department has a special collection on blood coagulation and thrombosis.

3. Special Facilities and Equipment.

Duke

The physical facilities of the Department of Pathology are those customary for such departments. Adequate provision is made for the development of all types of routine work in the field of general and special pathology. Major divisions of the laboratory are the general postmorten service, the surgical pathological diagnostic service, the surgical pathological diagnostic service, the neuropathological laboratories, and the laboratories devoted to special conferences and to the teaching of undergraduate medical students, interns, assistant residents and residents, and visiting doctors in special fields of pathology. Space for research is available on a limited basis but is adequate for reasonable demands. Laboratories are supplemented by a division of photography under the direction of professionally trained personnel. The photographic division is fully equipped and capable of all types of photographic work pertaining to the field of general and special pathology. It is also fully equipped and competent of dealing with all the normal problems of illustration for publication in the field of general and special pathology. Technical assistance adequately trained is available for a variety of experimental investigative work. The training of these members of the technical staff is especially in the field of animal care, histological technique, postmortem preparation of tissues, and the maintenance of all forms of material used in the field of the study, the teaching, and investigation of general and special pathological problems. Technical workers with special training in the field of tissue culture, the handling and care of experimental animals, the operation of equipment used in ultraviolet microscopy and in the study of animate causes of disease, especially the bacteria and the fungi, are available.

Adequate library facilities for the whole field of medicine, and particularly for the field of general pathology, are available. Intradepartmental special library collections are maintained where these collections are sufficiently specialized to warrant their separation from the general Hospital Library. All technical manuals of any consequence are available for ready reference. Comprehensive records are kept covering all pathological work which has been done since the beginning of the Medical School in 1930. These records are sufficiently comprehensive and complete for research of a most critical nature. The records are so organized and the material associated with these records so prepared that they become immediately available to those interested in and capable of using them for research purposes.

Large collections of illustrative material in the form of photographs, lantern

Duke

slides, drawings, etc., are available and are continuously being supplemented by the acquisition of new material. These illustrative materials are so organized, catalogued, etc., that they are immediately useful both for instructional purposes at all levels, and for research purposes. Adequate materials can be found in this collection relating to virtually any field of medical activity.

U. N. C.

Special equipment for study of protein fractionation includes: Spinco preparative ultracentrifuge, Aminco Electrophoresis Apparatus, Spinco electrophoresis-diffusion apparatus.

4. Major Areas of Present Research Activity.

Duke

a. Granulomatous infectious diseases.
b. The neuropathological effects of a variety of new therapeutic agents.
c. The development of new technical procedures in the handling of neuropathological materials.
d. Experimental tumors--the genesis of neoplasm.
e. Viral infections of the liver.
f. Lipoid metabolism especially as related to the development of the process of arteriosclerosis.
g. The nature and physiological properties of certain hormones and related substances produced by the adrenal glands.
h. The study of tumors, especially those of the testis, by tissue culture methods.
i. The nature and pathogenesis of fungus infections.
j. Disturbances of carbohydrate metabolism.
k. The use of the chorio-allantoic membrane in the culture and study of certain acid fast organisms belonging to the nocardia group.
l. Studies of soil bacteria with especial reference to the possible soil source of certain pathogenic fungi.

U. N. C.

a. Study of hemophilia and other bleeding diseases.
b. Fractionation of various plasma proteins, etc.

III-A cont.

PEDIATRICS

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Harris, Jerome S. (Med.)	M.D.	Professor of Pediatrics Chairman of Department Associate Professor of Biochemistry	Metabolic Diseases, Cardiovascular and Renal Disturbance in Children.
	b. Anderson, Frank (Med.)	M.D.	Instructor in Pediatrics	Preventive Pediatrics.
	c. Arena, Jay M. (Med.)	M.D.	Associate Professor of Pediatrics	Accidents and Poisons in Childhood.
	d. Davison, Wilburt C. (Med.)	M.D.	James B. Duke Professor of Pediatrics Dean, School of Medicine	Medical Education and Administration.
	e. Dees, Susan C. (Med.)	M.D.	Associate Professor of Pediatrics	Allergy in Childhood.
	f. DeMaria, William J. A. (Med.)	M.D.	Assistant Professor of Pediatrics	Renal Disorders in Childhood.
	g. Howell, Doris A. (Med.)	M.D.	Assistant Professor of Pediatrics	Pediatric Hematology.
	h. McBryde, Angus (Med.)	M.D.	Associate Professor of Pediatrics	Problems of Prematurity and New Born Infants.

III-A cont.

PEDIATRICS

1. Staff Personnel.

Interviewee	Staff Member	Degree Earned Lecture	Elevation	Special Competence
a.	Martin, George E. (Med.)	M.D.	Professor of Pediatrics Medicine Director of Gastroenterology Laboratory Veterans Administration Tuberculosis Hospital Pediatrician	Gastroenterology and Food Allergies in Children.
b.	Rodahaven, Frank (Med.)	M.D.	Instructor in Pediatrics	Preventive Pediatrics.
c.	Lowing, Kurt G. (Med.)	M.D.	Associate Professor of Pediatrics	Adolescents and Problems in Childhood.
d.	Dahlman, William C. (Med.)	M.D.	James B. Duke Professor Dean, School of Medicine	Medical Education and Administration.
e.	Green, Edwin C. (Med.)	M.D.	Associate Professor of Pediatrics	Allergy in Childhood.
f.	Hamburg, William J. A. (Med.)	M.D.	Assistant Professor of Pediatrics	Renal Disorders in Childhood.
g.	Hurwitz, Donna A. (Med.)	M.D.	Assistant Professor of Pediatrics	Pediatric Hematology.
h.	Roberts, Edgar (Med.)	M.D.	Associate Professor of Pediatrics	Problems of Prematurity and New Born Infants.

III-A cont. (Pediatrics)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.				
	a. Curnen, Edward C. (Med.)	M.D.	Professor Chairman of Department	Pediatrics and Infectious Diseases.
	b. Chamberlin, Harrie R. (Med.)	M.D.	Assistant Professor of Pediatrics	Pediatrics and Neurology.
	c. Chipman, Sidney S. (Med.)	M.D.	Clinical Professor of Pediatrics	Pediatrics and Public Health.
	d. London, Arthur H. (Med.)	M.D.	Clinical Professor of Pediatrics	Pediatrics.
	e. Ordway, Nelson K. (Med.)	M.D.	Professor of Pediatrics	Pediatrics and Cardiology.
	f. Peters, Ann DeHuff (Med.)	M.D.	Instructor in Pediatrics	Pediatrics (Newborn and Child Health Supervision).
	g. Scott, Annie V. (Med.)	M.D.	Visiting Professor of Pediatrics	Pediatrics and Tuberculosis.
	h. Summer, George K. (Med.)	M.D.	Fellow	Pediatrics and Metabolism.
	i. Van Wyk, Judson J. (Med.)	M.D.	Assistant Professor of Pediatrics	Pediatrics and Endocrinology.
	j. Winters, Robert W. (Med.)	M.D.	Chief Resident in Pediatrics	Pediatrics and Metabolism.

2. Library Resources.

Duke

Library facilities are those of the Duke Hospital Library plus a small departmental library consisting of the three major pediatric journals and approximately 100 reference books.

XII A 6000. (Pediatrics)

Ian Pediatrics	Staff Member	Degree Earned	Position	Special Competence
1.	Burton, Edward C. (Med.)	M.D.	Professor Chairman of Department	Pediatrics and Infectious Diseases.
2.	Chamberlin, Harris S. (Med.)	M.D.	Associate Professor of Pediatrics	Pediatrics and Neurology.
3.	Chipman, Sidney F. (Med.)	M.D.	Clinical Instructor of Pediatrics	Pediatrics and Public Health.
4.	Jacobs, Alfred M. (Med.)	M.D.	Clinical Professor of Pediatrics	Pediatrics.
5.	Overall, Helen R. (Med.)	M.D.	Professor of Pediatrics	Pediatrics and Gerontology.
6.	Palmer, Ann Duff (Med.)	M.D.	Instructor in Pediatrics	Pediatrics (Pediatrics and Child Health Supervisor).
7.	Roper, Annie W. (Med.)	M.D.	Visiting Professor of Pediatrics	Pediatrics and Endocrinology.
8.	Stewart, Doris R. (Med.)	M.D.	Dentist	Pediatrics and Nutrition.
9.	Van Ark, Palmer L. (Med.)	M.D.	Assistant Professor of Pediatrics	Pediatrics and Endocrinology.
10.	Wilson, Robert T. (Med.)	M.D.	Chief Resident in Pediatrics	Pediatrics and Cardiology.

Notes

1. Library facilities are those of the Lake Tomahawk Library plus a small medical library consisting of the three major pediatric journals and appropriate non-reference books.

U. N. C.

In addition to the resources of the main University Library and the Division of Health Affairs Library, the Department of Pediatrics and its members receive a number of periodicals including the following: Transactions of the New York Academy of Sciences, Annals of the New York Academy of Sciences, Bulletin of the History of Medicine, Journal of the History of Medicine and Allied Sciences, Virology, Journal of Medical Education, American Journal of Medicine, New England Journal of Medicine, Transplantation Bulletin, Proceedings of the Society for Experimental Biology and Medicine, Pediatrics, Journal of Pediatrics, Southern Medical Journal, Scientific Monthly, Scientific American, Federation Proceedings, Journal of the Elisha Mitchell Scientific Society, Bacteriological Reviews, Bacteriological Proceedings, Clinical Research Proceedings, Journal of Bacteriology, Bulletin of the World Health Organization, Science, Excerpta Medica (Pediatrics; Medical Microbiology; Immunology and Serology), Journal of the American Medical Association, Yale Journal of Biology and Medicine, Bulletin of the American Association of University Professors, American Journal of Public Health, Journal of Immunology, Journal of Clinical Investigation, American Journal of Diseases of Children. The departmental library consists, in addition, of a limited collection of books pertaining principally to pediatrics and its subdivisions, but also to virology and communicable disease.

3. Special Facilities and Equipment.

Duke

Special facilities include four laboratories for special investigation of problems related to pediatrics.

Special equipment includes: spectrophotometers, flame photometer, Geiger and scentillation radio activity counters, apparatus for paper chromatography and electrophoresis, oximeter, x-ray angiocardiographic cameras, and the usual laboratory equipment such as centrifuges, microscopes, etc.

U. N. C.

In addition to the facilities available in the hospital for the care of infants and children, the Department of Pediatrics has acquired facilities for a laboratory for research in virology, a laboratory for paper chromatography and electrophoretic studies, an endocrine and steroid chemistry laboratory which is in the process of being activated, and a cardiac laboratory which is shared jointly with members of the Departments of Medicine, Surgery, and Anesthesiology.

U. N. C.

The equipment includes facilities for care of small animals, an automatic autoclave, several centrifuges including a refrigerated Servall high-speed unit and a Spinco Ultracentrifuge, as well as refrigerators and deep-freezing cabinets, incubators, microscope, and other equipment required in tissue culture work, balances, a pH meter and an extensive assortment of instruments and glassware. Equipment for an endocrine and steroid chemistry laboratory is being assembled. Equipment being utilized for special work in paper chromatography and electrophoresis was in part purchased and in part borrowed from other departments of the Medical School. Special equipment for the study of patients with congenital heart disease is shared with members of the Departments of Medicine, Surgery, and Anesthesiology.

4. Major Areas of Present Research Activity.

Duke

a. Metabolism of refrigerated animals and organs.
b. Renal dynamics.
c. Transfusion reactions.
d. Cell permiability to electrolytes.
e. Cardiovascular surgery.
f. Allergic diseases.
g. Disorders of the premature.

U. N. C.

a. Investigation of clinical and laboratory methods for differentiating nonparalytic illnesses caused by poliomyelitis viruses from those attributable to Coxsackie viruses and other agents.

b. Study, using paper electrophoresis, of serum and urine proteins in relation to the cholesterol-phospholipid ratio in the nephrotic syndrome.

c. A tuberculin testing survey in North Carolina school children.

d. Participation in a nationwide study to determine whether Isoniazid will prevent the development of tuberculous meningitis in children with primary tuberculosis.

e. Study of acid-base disturbances in children with dehydration.

III-A cont. (Pediatrics)

U. N. C.

f. Study of the effects of vitamin K on prothrombin and proconvertin levels in children during the first year of life.

g. Clinical review of arthrochalasis, dermatochalasis, dermatorrhexis (the Ehler's Danlow Syndrome).

h. Long term follow-up study of protein partitioning in acute and convalescent nephritis.

i. Study of lipoproteins of juvenile diabetics: Quantitations from elution patterns produced by paper electrophoresis.

j. Studies of the renal structure and urinary concentrating ability of the potassium depleted rat.

PHARMACOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	(See Physiology)			
U. N. C.	a. Butler, Thomas C. (Med.)	M.D.	Professor Chairman of Department	Drug Metabolism, Pharmacology of Hypnotic and Anesthetic Drugs.
	b. Csaky, T. Z. (Med.)	M.D.	Associate Professor	Enzymology, Cellular Physiology, Carbohydrate Metabolism.
	c. Ellis, Fred W. (Med.)	M.D. Ph.D.	Associate Professor	Pharmacology of Autonomic Nervous System, Metabolism of Alcohol.

III-A cont. (Pharmacology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	d. Hill, John B. (Med.)	M.D. Ph.D.	Assistant Professor	Endocrinology.
	e. Pearson, John W. (Med.)	B.M. B.Ch.	Instructor	Pharmacology of Gastro-intestinal System.

2. Library Resources.

U. N. C.

The department does not have its separate library but utilizes the Division of Health Affairs Library, which has the more important periodicals dealing with pharmacology and related fields.

3. Special Facilities and Equipment.

U. N. C.

Special equipment making possible the use of numerous methods of pharmacological, physiological and biochemical investigation. Equipment for analytical and preparative chemistry.

4. Major Areas of Present Research Activity.

U. N. C.

a. Study of the distribution and mechanism of excretion of phenobarbital.
b. Study of the metabolic hydroxylation of phenobarbital.
c. Study of the metabolic hydroxylation of mesantoin, nirvanol, and diphenyl hydantoin.
d. Development of a method for the assay of small amounts of insulin.
e. Study of the effects of drugs on intestinal absorption and motility.
f. Study of the relationship between adrenal cortical function and alcoholic intoxication.
g. Study of the relationship between the permeation and the metabolism of carbohydrates in different cells.
h. Study of the metabolism, utilization, and action of methyl ethers of monosaccharides.

III-A cont.

PHARMACY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Brecht, E. A.	Ph.D.	Professor of Pharmacy Dean of School	Formulations and Stability of Pharmaceutical Preparations, Plant Analysis.
	b. Andrako, John	Ph.D.	Associate Professor of Pharmaceutical Chemistry	Synthesis of Medicinal Products and Formulation.
	c. Cooper, Ben F.	M.S.	Instructor in Pharmacy	Pharmaceutical Formulation.
	d. Hammerness, F. C.	M.S.	Instructor in Pharmacy Administration	Research in the Economic Structure of Total Pharmacy from the Retail to the Manufacturing Levels.
	e. Hartung, W. H.	Ph.D.	Professor of Pharmaceutical Chemistry	Synthesis of Medicinal Products.
	f. Semeniuk, Fred T.	Ph.D.	Professor of Pharmaceutical Chemistry	Pharmaceutical Chemistry as Applied to Synthesis, Analysis and Pharmaceutical Formulation.
	g. Taylor, W. W.	S.B.	Instructor in Hospital and Chief Pharmacist, N. C. Memorial Hospital	Pharmaceutical Formulation.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	h. Thompson, H. O.	Ph.D.	Professor of Pharmacy	Formulation, Especially the Production of Medicinal Tablets and Parenteral Solutions.

2. Library Resources.

U. N. C.

The Pharmacy Library is located in the Howell Hall of Pharmacy and has a total of more than 7,100 books and bound volumes of periodicals pertaining to pharmacy and the collateral sciences. The library holds subscriptions to 146 professional and scientific periodicals. A valuable pamphlet collection and 36,000 reference cards provide further facilities for research and study. Extensive historical files pertaining to North Carolina pharmacy and pharmacists are maintained.

The Pharmacy Library is a part of the Division of Health Affairs Library, which has additional collections located in the North Carolina Memorial Hospital and the School of Nursing building. The combined collections total approximately 45,000 volumes specialized in the health sciences. Collateral references are immediately available in the main and departmental libraries of the University of North Carolina.

3. Special Facilities and Equipment.

U. N. C.

Special facilities consist of a laboratory for research in manufacturing pharmacy.

Special equipment includes: commercial types of tablet presses, oscillating granulator, humidity controlled drying ovens, tablet coating equipment, low- and high-pressure hydrogenation equipment, Beckman spectrophotometer, tablet disintegration testing equipment, tablet hardness testers, etc.

4. Major Areas of Present Research Activity.

U. N. C.

a. Research on two specific aspects of tablet manufacture.
b. A study on the prevention of inactivation of quaternary germicides in troches.
c. Investigation of solvents for intranasal medication.
d. Low-pressure hydrogenations.
e. Synthesis of amino acid peptides.

PHYSICS

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
	a. Nielsen, Walter M.	Ph.D.	Professor Chairman of Department	Cosmic Rays.
	b. Block, Martin	Ph.D.	Assistant Professor	Cosmic Rays.
	c. Fairbank, William	Ph.D.	Associate Professor	Low Temperature, Properties of Helium and Other Matter at Low Temperature.
	d. Gordy, Walter	Ph.D.	Professor	Microwave and Radio-frequency Spectroscopy.
	e. Greuling, Eugene	Ph.D.	Associate Professor	Theoretical Physics.
	f. Lewis, Harold	Ph.D.	Associate Professor	Experimental Nuclear Physics.
	g. Newson, Henry	Ph.D.	Professor	Experimental Nuclear Physics.

III-A cont. (Physics)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	h.	Nordheim, Lothar	Ph.D.	Professor	Theoretical Physics.
	i.	Sponer, Hertha	Ph.D.	Professor	Molecular Structure.
	j.	Williamson, Robert	Ph.D.	Assistant Professor	Experimental Nuclear Physics.
N. C. State	a.	Beck, Clifford K. (Engin.)	Ph.D.	Professor Head of Department	Design, Utilization of Research Reactors, Effects of Radiation on Materials, Safety of Nuclear Plants and Reactors.
	b.	Barrett, John (Engin.)	Ph.D.	Assistant Professor	Theoretical and Experimental Work in Solid State Physics, X-rays.
	c.	Crownfield, Fred (Engin.)	Ph.D.	Instructor	Theoretical Physics: Radiation Effects on Materials.
	d.	Lancaster, Forrest W. (Engin.)	Ph.D.	Professor	Acoustics, Optical Properties of Materials.
	e.	Menius, Arthur C., Jr. (Engin.)	Ph.D.	Professor	Theoretical Physics, Experimental Behavior of Positronium.
	f.	Murray, Raymond L. (Engin.)	Ph.D.	Professor	Theoretical Problems in Nuclear Reactor Design.
	g.	Underwood, Newton (Engin.)	Ph.D.	Professor	Instrumentation, Experimental Physics, Applications of Radioactivity.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	h. Waltner, Arthur W. (Engin.)	Ph.D.	Associate Professor	Experimental Nuclear Physics.
	i. Whitehead, Dexter W. (Engin.)	Ph.D.	Associate Professor	Experimental Nuclear Physics.
U. N. C.	a. Shearin, Paul E.	Ph.D.	Professor Chairman of Department	Fundamental Particle Physics and Physics of Metals.
	b. Bowers, Wayne A.	Ph.D.	Professor	Theoretical Solid-State and Nuclear Physics.
	c. Davis, Morris S.	Ph.D.	Assistant Professor of Astronomy	Celestial Mechanics.
	d. Masket, A. V.	Ph.D.	Associate Professor	Experimental Nuclear Physics and Electronics.
	e. Merzbacher, Eugen	Ph.D.	Assistant Professor	Theoretical Nuclear Physics.
	f. Palmatier, Everett	Ph.D.	Associate Professor	Cosmic Rays.
	g. Slifkin, L. M.	Ph.D.	Assistant Professor	Experimental Solid-State Physics.
	h. Straley, Joseph W.	Ph.D.	Associate Professor	Infrared Spectroscopy.

2. Library Resources.

Duke

The Physics-Mathematics Library located in the Physics Building has a total of approximately 17,500 volumes. Periodicals and reference sources are complete for

Duke

all but extraordinary requirements for research in all the fields of basic physics. The library has been designated as a repository by the Atomic Energy Commission.

N. C. State

Mathematics-Physics Library resources combined with General Library. N. C. State is an official A.E.C. repository and document inventories in this field are particularly complete.

U. N. C.

The Physics-Mathematics Library is located in Phillips Hall, the building which houses these two departments. This library has a total of 202 periodicals and approximately 12,000 volumes covering the fields of Physics, Mathematics, Astronomy, and Mathematical Statistics. (See "Checklist of Scientific Periodicals," Parker, 1954, for list of all scientific periodicals at Duke, North Carolina State, and the University of North Carolina.) The library facilities are adequate for normal research requirements.

3. Special Facilities and Equipment.

Duke

Special shop facilities include a well equipped machine shop with four full-time machinists and one full-time electronics technician, a well equipped glass shop with full-time glassblower.

Special equipment includes: a four-million-volt Van de Graaff accelerator, a Collins Liquid Helium Cryostat, equipment for the generation, amplification and detection of very high frequency electromagnetic radiation (up to about 300,000 megacycles per second), electromagnets of various capacities as used in radio-frequency spectroscopy and in low temperature applications, oscilloscopes including the fast writing type, recording meters of various kinds, Geiger counters and crystal counters as used in nuclear spectrographs, amplifiers, scalers, and similar electronic equipment as used in nuclear physics studies, a special electromagnet for study of charged particle nuclear reactions. Optical spectrographs of various sizes in glass and quartz, a 3-meter grating in Eagle mount and a 22-foot Jarrell-Ash spectrograph, a Jarrell-Ash densitometer with recording equipment, monochromatic illuminator for both the visible and ultraviolet, liquid helium bubble chamber for study of high energy interactions, electronic circuits for time-of-flight measurements with resolution of about 8×10^{-10} second.

N. C. State

Special equipment includes Perkin-Elmer infrared recording spectrograph, precision refractometer, Bellingham and Stanley research polarimeter, Knorr-Albers microdensitometer, Bausch and Lomb quartz prism emission spectrograph, Beckman quartz spectrometer, 10 KW Nuclear Reactor (Burlington Nuclear Laboratory).

The Physics Department has access to and conducts a considerable portion of its research on an RCA Electron Microscope, two precision X-ray machines, metallurgical and metallographic apparatus, and a high precision calorimetric apparatus for measuring thermal transitions in solid specimens.

The special apparatus associated with the Research Reactor includes a gamma ray spectrometer, 4 pulse height analysers, a neutron diffraction spectrometer, and a wide variety of scalers, amplifiers and radiation measuring instruments.

U. N. C.

Special facilities include a well-equipped instrument shop with three full-time instrument makers and a half-time clerk, radioisotope laboratory shared by all science departments, liquid-air machine, cosmic ray laboratory, infrared laboratory, metals testing laboratory, and solid-state laboratory now being equipped.

Special equipment includes: Perkin-Elmer Model 112 Infrared Spectrometer with interchangeable optics of glass, LiF, NaCl, and KBr, Hilger E-1 Large Quartz Spectrometer, Gaertner L-231 Spectrometer, geiger counters of many types, proportional counters and ionization chambers, enriched BF_3 neutron counters and photomultiplier detectors plus associated electronic equipment, a large cloud chamber (dimensions 1' x 1' x 2'), Research Microscopes for nuclear emulsion studies together with semi-automatic scanning devices and plate processing equipment, 200,000 lb. Olsen Testing Machine, 100,000 lb. Riehle Testing Machine, Rockwell and Brinnel harness testers; Heiland, General Electric, Brown, and Leeds and Northrup Potentiometer Recorders; several desk calculators, 15-inch Cassegrain reflecting telescope.

4. Major Areas of Present Research Activity.

Duke

a. Measurement of neutron cross sections including neutron width, charge particle scattering and Coulomb excitation, charged particle reactions.

Duke

b. Study of the structure of molecules by microwave spectroscopy and radio-frequency techniques.
c. Solid state studies, particularly as assisted by radiation damage and low temperature.
d. Study of properties of liquid helium at low temperature.
e. Studies in high energy physics including new unstable particles--interaction of extremely high energy particles with matter.
f. Study of superconductivity at high frequencies.
g. Molecular structure of certain organic molecules.
h. Study of reactions taking place in flames.
i. Theoretical studies in nuclear shell structure and beta-rays.

N. C. State

a. Basic research in nuclear reactor instrumentation, calibration, and operation.
b. Research program using the Raleigh Research Reactor.
c. Radiation damage in materials.
d. Neutron activation analysis.
e. Neutron diffraction studies.
f. Relation of physical properties to order-disorder characteristics of alloys.
g. Properties and behavior of positronium.
h. Acoustical and optical properties of matter.

U. N. C.

a. Cosmic Rays: Properties at sea level and energy loss processes of high energy particles traversing gases.
b. Infrared Molecular Spectroscopy: Measurement of intensities of absorption bands and relation of Matrix element of dipole moments to known electronic properties of the molecule.
c. Physics of Metals: Plastic deformation and study of fracturing of metals with a special emphasis on energy dissipation using special alloys of steel and aluminum.
d. Celestial Mechanics including determination of mass of Saturn and improvements in the calculations of orbits of Tetys, Rhea, and Titan (475 photographic plates of these satellites taken at Yale Observatories are available).
e. Solid-State Physics: Experiments concerned with the mechanism of diffusion of metals in metals in the solid state, mechanical properties of single crystals of silver chloride, with special reference to the effects of photoelectric processes, cross-section for scattering of electrons by vacancies in metal crystals by studies of the resistivity of "defect alloys," research in

U. N. C.

semiconductor and optical phenomena in materials such as cadmium sulfide crystals and electroluminescent substances.

f. Nuclear Physics: Research projects utilizing the Van de Graff Generators at Duke and Oak Ridge with particular reference to nuclear scattering cross-sections.

g. Theoretical Physics: Topics under study include: "X-ray Production by Heavy Particles," "Coulomb Excitation of Nuclei," "Statistical Problems in Ionization and Energy Loss," "Spin-Orbit Interaction and JJ-Coupling," "Lattice Vibrations in Crystals."

PHYSIOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke				
		Physiology and Pharmacology		
	a. Hall, F. G. (Med.)	Ph.D.	Professor Chairman of Department	Aviation Physiology, Dynamics of Breathing, Hemoglobin Function.
	b. Bernheim, F. (Med.)	Ph.D.	Professor	Cellular Enzyme Mechanisms, Mode of Drug Action.
	c. DeTurk, William (Med.)	M.D. Ph.D.	Associate Professor	Cellular Metabolism.
	d. Eadie, G. S. (Med.)	M.D.	Professor	Kinetics of Enzyme Activity, Preservation of Blood.
	e. Goodall, McChesney (Med.)	M.D.	Associate Professor	Endocrine Assay and Biological Stress.

III-A cont. (Physiology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	f. Hull, W. E. (Med.)	Ph.D.	Assistant Professor	Respiratory Mechanics, Aviation Physiology.
	g. Penrod, K. E. (Med.)	Ph.D.	Associate Professor	Oxygen Toxicity, Hypothermia.
N. C. State				
			Physiology	
	a. Anderson, Donald B. (Agr.)	Ph.D.	Professor Head, Division of Biological Sciences	Plant Physiology.
	b. Casady, Robert B. (Agr.)	Ph.D.	Associate Professor	Animal Physiology.
	c. Colvard, Dean W. (Agr.)	Ph.D.	Professor, Dean of School of Agriculture	Dairy Physiology.
	d. Cook, F. W. (Agr.)	M.S.	Assistant Professor	Animal Physiology.
	e. Correll, Franklin E. (Agr.)	M.S.	Instructor	Pomology-Physiology.
	f. Garren, Henry W. (Agr.)	Ph.D.	Associate Professor	Animal Physiology.
	g. McCombs, Clarence L. (Agr.)	M.S.	Instructor	Vegetable Physiology.
	h. Moore, J. L. (Agr.)	M.S.	Assistant Professor	Dairy Physiology.
	i. Moore, R. P. (Agr.)	Ph.D.	Professor	Seed Physiology.
	j. Myers, Richard M. (Agr.)	M.S.	Instructor	Dairy Physiology.

III-A cont. (Physiology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	k. Scofield, Herbert T. (Agr.)	Ph.D.	Professor Head of Botany	Plant Physiology.
	l. Thomas, Walter E. (Agr.)	Ph.D.	Associate Professor	Animal Physiology.
	m. Walker, David R. (Agr.)	Ph.D.	Assistant Professor	Pomology-Physiology.
U. N. C.	a. Ferguson, J. H. (Med.)	M.D.	Professor Head of Department	Bleeding and Clotting Disorders.
	b. Hiatt, Edwin Peelle (Med.)	Ph.D. M.D.	Associate Professor	Kidney Physiology.
	c. McClellan, Walter S. (Med.)	M.D.	Part-time Lecturer	Physiology of Aging.
	d. Miller, A. T., Jr. (Med.)	Ph.D. M.D.	Professor	Respiration and Metabolism.
	e. Perlmutt, Joseph H. (Med.)	Ph.D.	Assistant Professor	Endocrinology.
	f. Schottelius, Byron A. (Med.)	Ph.D.	Instructor	Neuromuscular Physiology.

2. Library Resources.

Duke

The Department of Physiology and Pharmacology is an integral part of the Medical School and Hospital. The Duke Hospital Library, available to the whole staff and one of the finest in the country, is described elsewhere.

N. C. State

See statement on School of Agriculture in "General Library Resources" for N. C. State College.

U. N. C.

See statement on Division of Health Affairs in "General Library Resources" for the University of North Carolina.

3. Special Facilities and Equipment.

Duke

Special facilities include laboratories for simulated high altitude work, for endocrine assay, enzyme studies, and mammalian cardiovascular investigations.

Special equipment includes ultra-violet spectrophotometers, cathode-ray oscillographs, pressure transducers, pneumotachigraph recorders, Warburg micro-respirometers, centrifuges, Kymographic cameras, X-ray fluoroscope, treadmill, low pressure chamber, interferometer, infrared CO_2 analyzers, Pauling meters.

N. C. State

Special facilities: A controlled light-temperature plant growth room, a low temperature-low humidity tobacco storage room, temperature and humidity controlled rooms for farm animals.

U. N. C.

Special equipment includes: Centrifuges (incl. Servall vacuum centrifuge and International refrigerated centrifuge with "multispeed" attachment), Lyophile apparatus, refrigerators (incl. 20°C storage), pH meters, conductivity measuring apparatus (for ionic strengths of salt solutions), water baths, laboratory hot room, treadmill, metabolism apparatus (human and animal), Warburg tissue respiration apparatus, tissue homogenizers (various), electro-cardiograph, oximeter, Beckman spectrophotometer, Beckman oxygen analyzer, Krieg rat stereotaxic instrument, flame photometer, electromanometer, apparatus for indirect measurement of blood pressure in small animals, pH meter, 5 colorimeters, rotatory agitator for extraction of steroids by dialysis, distillation apparatus, paper chromatography equipment, constant temperature bath, Dumont dual beam oscilloscope, Grass research stimulator, Grass preamplifier, Grass 4 channel pen writing oscillograph, Dumont single frame oscilloscope camera, Smaller electronic measurement devices, Mechano-electronic isotonic myograph.

4. Major Areas of Present Research Activity.

Duke

a. Endocrine assay.
b. Dynamics of breathing.
c. Oxygen toxicity.
d. Effects resistance to breathing.
e. Hemoglobin and anoxia tolerance.
f. Acclimatization to altitude.
g. Physiology of new born.
h. Biological effects of radiation.
i. Antibiotic mechanisms and drug action.
j. Bacteria metabolism.
k. Biochemistry of burns.

N. C. State

a. Physiology of reproduction, male and female.
b. Function of the rumen.
c. Study of enzyme systems.
d. Role of those elements in plant metabolism.
e. Growth regulation and control.

U. N. C.

a. Blood coagulation and related fields.
b. Regulation of energy metabolism.
c. Influence of obesity on adjustments to exercise, heat, and dehydration.
d. The effect of partial substitution of the nitrate ion for the chloride ion on circulation and electrolyte balance with special reference to hypertension and edema.
e. Effect of carbonic anhydrase inhibitor on renal excretion of electrolytes in adrenalectomized animals.
f. Steroid hormone content of human placentae.
g. Mechanical properties of shortened skeletal muscle.
h. Mechanical and chemical properties of dystrophic muscle.
i. Studies on the "Amygdaloid Complex."
j. Metabolism in obesity.

PLANT PATHOLOGY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	a. Ellis, D. E. (Agr.)	Ph.D.	Professor Head of Department	Vegetable Pathology.
	b. Allison, Joseph L. (Agr.)	Ph.D.	Professor	Forage Crop Diseases.
	c. Apple, J. Lawrence (Agr.)	Ph.D.	Assistant Professor	Genetics of Fungi.
	d. Aycock, Robert (Agr.)	Ph.D.	Associate Professor	Vegetable and Ornamental Pathology.
	e. Clayton, C. N. (Agr.)	Ph.D.	Professor	Fruit Diseases.
	f. Cooper, William E. (Agr.)	Ph.D.	Assistant Professor	Peanut Diseases.
	g. Drolsom, Paul N. (Agr.)	Ph.D.	Assistant Professor	Tobacco Diseases.
	h. Hebert, T. T. (Agr.)	Ph.D.	Associate Professor	Small Grains and Virus Diseases.
	i. Hirschmann, Hedwig R. (Agr.)	Ph.D.	Instructor	Nematology.
	j. Holtzmann, Oliver V. (Agr.)	Ph.D.	Assistant Professor	Ornamental Diseases.
	k. Kelman, Arthur (Agr.)	Ph.D.	Associate Professor	Bacterial Diseases.

III-A cont. (Plant Pathology)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	l.	Lucas, G. B. (Agr.)	Ph.D.	Associate Professor	Genetics of Fungi.
	m.	Moore, Elmer L. (Agr.)	Ph.D.	Assistant Professor	Tobacco Pathology.
	n.	Nelson, Richard R. (Agr.)	Ph.D.	Assistant Professor	Corn Pathology.
	o.	Nielsen, Lowell W. (Agr.)	Ph.D.	Professor	Vegetable Pathology.
	p.	Nusbaum, Charles J. (Agr.)	Ph.D.	Professor	Tobacco Pathology.
	q.	Person, Lee H. (Agr.)	Ph.D.	Associate Professor	Disease Survey.
	r.	Sasser, Joseph N. (Agr.)	Ph.D.	Associate Professor	Nematology.
	s.	Skotland, Calvin B. (Agr.)	Ph.D.	Assistant Professor	Soybean Pathology.
	t.	Sommer, Noel F. (Agr.)	Ph.D.	Assistant Professor	Small Grains.
	u.	Winstead, Nash N. (Agr.)	Ph.D.	Assistant Professor	Vegetable Pathology.

2. Library Resources.

N. C. State

See statement on School of Agriculture in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

a. Nematology Laboratories.
Fully equipped research and teaching laboratories for the study of plant parasitic nematodes. Facilities include special equipment for screening and assaying soils for nematodes.

b. Controlled Temperature Equipment.
1. An air-conditioned Microtechnique laboratory.
2. An air-conditioned laboratory for the study of plant pathogenic fungi and bacteria.
3. Four artificially-lighted, controlled-temperature rooms for inoculation studies and screening for disease resistance.
4. An air-conditioned photographic laboratory.

c. Microscopic Equipment.
Access to electron microscope.

d. Greenhouses.
12,000 square feet of greenhouse space.

4. Major Areas of Present Research Activity.

N. C. State

a. Nematology, species identification ecology and control: fungus, virus and bacterial diseases affecting crops of the state; also crop disease survey and prediction service.

PREVENTIVE MEDICINE

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Fleming, William L. (Med.)	M.D.	Professor Chairman of Department	Occupational Health Problems and Programs.

III-A cont. (Preventive Medicine)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	b. Garvin, Oscar David (Med.)	M.D.	Clinical Assistant Professor	Not furnished.
	c. Richardson, William P. (Med.)	M.D.	Professor Assistant Dean in Charge of Continuation Education	Occupational Health Problems and Programs.
	d. Sackett, Florence (Med.)	M.P.H.	Instructor	Not furnished.

Additional data not furnished by this department.

PSYCHIATRY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Busse, Ewald W. (Med.)	M.D.	Professor Chairman of Department	Geriatrics, Psychosomatic Medicine and Electro-encephalography.
	b. Barnes, Robert H. (Med.)	M.D.	Assistant Professor of Psychiatry	Neurophysiology, Psychosomatic Medicine and Geriatrics.
	c. Cohen, Louis D. (Med.)	Ph.D.	Associate Professor of Medical Psychology	Effect of Anxiety Upon Mental and Motor Skills.

III-A cont. (Psychiatry)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	d.	Dovenmuehle, Robert H. (Med.)	M.D.	Instructor in Psychiatry	Alcoholism, Cause and Prevention.
	e.	Goldsmith, Jewett (Med.)	M.D.	Assistant Professor of Psychiatry	Teaching Methods and Techniques in Psychotherapy.
	f.	Jeffers, Frances (Med.)	M.A. M.S.	Research Associate	Recreational Facilities and Methods for Older Workers.
	g.	Llewellyn, Charles (Med.)	M.D.	Associate in Psychiatry	Emotional Problems Resulting from Industrial Accidents.
U. N. C.	a.	Abse, David Wilfred (Med.)	M.D. D.P.M.	Associate Professor of Psychiatry Director of Inpatient Division	Not furnished.
	b.	Adkins, Dorothy C. (Med.)	Ph.D.	Professor of Psychology Consultant in Research Psychology	Not furnished.
	c.	Baughman, E. Earl (Med.)	Ph.D.	Associate Professor Psychology in Department of Psychology and Department of Psychiatry	Not furnished.
	d.	Bever, Christopher T. (Med.)	M.D.	Associate Professor of Psychiatry, Director of Outpatient Division	Not furnished.

III-A cont. (Psychiatry)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	e. Blackwell, Gordon W. (Med.)	Ph.D.	Professor of Sociology, Director of the Institute for Research in Social Science, Consultant in Social Science Research	Not furnished.
	f. Bryant, Alice M. (Med.)	R.N.	Supervisor of Psychiatric Nursing	Not furnished.
	g. Carpentieri, Joseph (Med.)	M.D.	Clinical Instructor in Psychiatry	Not furnished.
	h. Carter, Isabelle K. (Med.)	M.S.S.	Associate Professor of Social Work, Consultant in Social Work	Not furnished.
	i. Curtis, Thomas E. (Med.)	M.D.	Instructor in Psychiatry, Executive Assistant to Chairman of Department of Psychiatry	Not furnished.
	j. Dahlstrom, William G. (Med.)	Ph.D.	Associate Professor of Psychology in Department of Psychiatry and Department of Psychology	Not furnished.
	k. Estes, Marion M. (Med.)	M.D.	Clinical Assistant Professor of Psychiatry	Not furnished.
	l. Ewing, John A. (Med.)	M.D. D.P.M.	Instructor in Psychiatry, Director of Alcoholic Research and Service Program	Not furnished.
	m. Forizs, Lorant (Med.)	M.D.	Clinical Assistant Professor of Psychiatry	Not furnished.

III-A cont. (Psychiatry)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	n.	Fortin, John N. (Med.)	M.D.	Instructor in Psychiatry, Psychiatrist in the Student Health Service	Not furnished.
	o.	Fritz, Shirley J. (Med.)	B.S.	Chief Occupational Therapist	Not furnished.
	p.	Ham, George C. (Med.)	M.D.	Professor, Chairman of Department of Psychiatry	Not furnished.
	q.	Hargrove, Eugene A. (Med.)	M.D.	Assistant Professor of Psychiatry	Not furnished.
	r.	Hawkins, David R. (Med.)	M.D.	Assistant Professor of Psychiatry, Liaison in Internal Medicine	Not furnished.
	s.	Hinnom, Juta (Med.)	B.S.	Occupational Therapist	Not furnished.
	t.	Howell, Roger W. (Med.)	M.D.	Professor of Mental Health in School of Public Health, Consultant in Public Health Psychiatry and Staff Therapist	Not furnished.
	u.	Jessner, Lucie (Med.)	Ph.D. M.D.	Professor of Psychiatry, Director of Child Psychiatry	Not furnished.
	v.	LaBarre, Maurine B. (Med.)	M.A. M.D.	Part-time Psychiatric Social Worker	Not furnished.
	w.	Linch, Albert (Med.)	M.S.	Chief Psychiatric Social Worker and Instructor or Psychiatric Social Work	Not furnished.

III-A cont. (Psychiatry)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	x. Long, Ira G. (Med.)	M.D.	Lecturer in Psychiatry	Not furnished.
	y. Long, Virginia (Med.)	M.S.	Psychiatric Social Worker	Not furnished.
	z. Maynard, Frances (Med.)	M.S.	Psychiatric Social Worker	Not furnished.
	aa. McKee, John Sasser, Jr. (Med.)	M.D.	Lecturer in Psychiatry	Not furnished.
	bb. Menefee, Frances Louise (Med.)	M.A.	Clinical Psychologist	Not furnished.
	cc. Murdoch, James W. (Med.)	M.B. Ch.B.	Lecturer in Psychiatry	Not furnished.
	dd. Proctor, James T. (Med.)	M.D.	Instructor in Psychiatry, Child Psychiatrist	Not furnished.
	ee. Richardson, Marianne (Med.)	M.S.	Psychiatric Social Worker in Child Unit	Not furnished.
	ff. Rosenbaum, Milton (Med.)	Ph.D.	Assistant Professor of Psychology in Department of Psychiatry and Department of Psychology	Not furnished.
	gg. Sandifer, Myron G., Jr. (Med.)	M.D.	Instructor in Psychiatry	Not furnished.
	hh. Shands, Harley C.	M.D.	Associate Professor of Psychiatry, Coordinator of Departmental Research, Liaison on General Clinic	Not furnished.

III-A cont. (Psychiatry)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	ii. Sikes, Walter A. (Med.)	M.D.	Clinical Instructor in Psychiatry	Not furnished.
	jj. Smith, Harvey L. (Med.)	Ph.D.	Associate Professor of Sociology, Consultant in Sociology	Not furnished.
	kk. Toops, Thorndike C. (Med.)	M.D.	Instructor in Psychiatry	Not furnished.
	ll. Welsh, George S. (Med.)	Ph.D.	Associate Professor of Psychology in Department of Psychology and Department of Psychiatry	Not furnished.
	mm. Whitaker, Paul F. (Med.)	M.D. LL.D.	Clinical Associate Professor of Medicine, Consultant in Psychiatry in General Practice	Not furnished.
	nn. Young, David A. (Med.)	M.D.	Clinical Professor of Psychiatry	Not furnished.

2. Library Resources.

Duke

The Department does not possess its own library, but the general library of Duke Hospital provides excellent periodical and reference sources.

U. N. C.

The library of the Division of Health Affairs located in the Hospital contains about 50,000 volumes and receives over 700 serial publications.

Institution	Staff Member	Highest Earned Degree	Position	Special Curriculum
U.S.P. C.	14. Stone, Walter A. (Med.)	M.D.	Clinical Instructor in Psychiatry	Not Furnished.
	15. Smith, Harvey L. (Med.)	Ph.D.	Associate Professor of Sociology, Consultant in Sociology	Not Furnished.
	16. Tooze, Thorndike C. (Med.)	M.D.	Instructor in Psychiatry	Not Furnished.
	17. Wolfe, George S. (Med.)	M.D.	Associate Professor of Psychiatry, in charge of Psychiatry and Director of Psychiatry and Director of Psychiatry	Not Furnished.
	18. Wolfenden, Ralph W. (Med.)	M.D. Ph.D.	Clinical Associate Professor of Psychiatry in charge of Psychiatry in Central Prison	Not Furnished.
	19. Young, David A. (Med.)	M.D.	Clinical Professor of Psychiatry	Not Furnished.

2. Library Facilities.

The Penitentiary does not maintain its own library, but the nearest library is Texas Medical Service which serves psychiatrical and laboratory service.

3. Clinic.

The Library of the Division of Health Affairs located in the dormitory contains about 20,000 volumes and receives over 100 medical publications.

3. Special Facilities and Equipment.

Duke

a. Electroencephalograph Laboratory.
b. Instruments for Measuring Critical Flicker Fusion Frequency for Light.
c. Research Laboratory for the Study of the Origin of Basic Drives.
d. Laboratory for the Study of Neurophysiological Changes in Elderly People.

U. N. C.

There is a seven-story building equipped for the care of 72 inpatients along medical, physical, and psychotherapeutic lines, and an outpatient service for children and adults where medical, psychiatric, psychological, and sociological evaluations and treatment of psychiatric disturbances are conducted. There are special areas for occupational and recreational treatment, and plans are in process for additional research space to be used in research in the biological aspects of human adaptation as well as in the implementation of sociological, psychological, and medical investigation.

4. Major Areas of Present Research Activity.

Duke

a. Studies of the Processes of Aging (Geriatrics).
b. The Effect of Multiple Operations on the Personality of a Person.
c. The Origin of Agressive Drives in Lower Animals.
d. The Variations in Blood Flow to the Brain.
e. The Alterations of Perception by Anxiety and New Methods of Psychological Testing and Evaluation.

U. N. C.

There would appear to be a number of the projects currently in being or in prospect in the department which would be of interest to the Triangle Research Committee. Of these, the most obvious ones would be the program for the investigation of alcoholism and for the care of alcoholic patients under the direction of Dr. Ewing and the work on personnel psychology and testing in the Department of Psychology, under the direction of Dr. Dahlstrom and his associates.

Several studies in group processes and the working together of small groups around a goal-oriented task are now in progress. The alcoholic group under Dr.

Ewing, and a group of students with peptic ulcers under Dr. Fortin are the most thoroughly organized of these at the moment.

There is a very considerable interest in the areas of research in psychosomatic diseases being implemented now by a number of people, especially Drs. Hawkins, Sandifer, Harvey Smith, and Shands. An effort is being made in these studies to integrate social pressures and biological demands with illness. These studies point in the general direction of attempting to understand something of the way in which stresses of modern living produce disease.

Negotiations have been begun for the setting up of a series of projects attempting to evaluate the results of psychotherapy.

PSYCHOLOGY

1. Staff Personnel

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Rodnick, Eliot H.	Ph.D.	Professor Chairman of Department	Experimental Psychopathology, Reactions to Stress, Personality, Clinical Psychology.
	b. Adams, Donald K.	Ph.D.	Professor	Developmental, Personality, Social.
	c. Banham, Katharine M.	Ph.D.	Associate Professor	Clinical, Child Development.
	d. Borstelmann, Lloyd J.	Ph.D.	Assistant Professor	Clinical, Child Development.
	e. Cohen, Louis D.	Ph.D.	Associate Professor	Clinical, Psychosomatic Medicine

III-A cont. (Psychology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	f. Garmezy, Norman	Ph.D.	Associate Professor	Clinical, Experimental Psychopathology, Learning.
	g. Guttman, Norman	Ph.D.	Assistant Professor	Experimental Psychology, Motivation, Animal Psychology.
	h. Jones, Edward E.	Ph.D.	Assistant Professor	Social Psychology, Personality, Small Group Behavior.
	i. Kimble, Gregory	Ph.D.	Associate Professor	Experimental Psychology, Learning, Motor Behavior.
	j. Koch, Sigmund	Ph.D.	Professor	Theoretical Psychology, Learning and Motivation.
	k. Kuder, G. Frederic	Ph.D.	Professor	Psychometric Test Construction, Personnel and Industrial Psychology.
	l. McHugh, Gelolo	Ph.D.	Assistant Professor	Child, Tests.
	m. Parsons, Oscar A.	Ph.D.	Assistant Professor	Clinical.
	n. Reichenberg, Wally	Ph.D.	Assistant Professor	Clinical, Child Development.
	o. Spielberger, Charles	Ph.D.	Assistant Professor	Clinical.
	p. Wilson, Kellogg	Ph.D.	Assistant Professor	Statistics, Communication, Language.
	q. Zener, Karl	Ph.D.	Professor	Experimental Psychology, Perception.

III-A cont. (Psychology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	Psychology and Human Relations			
	a. Hamilton, C. Horace (Agr.)	Ph.D.	Professor Head Rural Sociology	Rural Sociology.
	b. Lowry, Sheldon G. (Agr.)	M.A.	Assistant Professor	Rural Sociology.
	c. Mayo, Selz C. (Agr.)	Ph.D.	Professor	Rural Sociology.
U. N. C.				
	a. Adkins, Dorothy C.	Ph.D.	Professor Chairman of Department	Psychological Statistics, Test Construction, Test Theory, Factor Analysis, Personnel Psychology.
	b. Baughman, E. Earl	Ph.D.	Associate Professor Coordinator of Clinical Training Program, Research Associate in Institute for Research in Social Science	Clinical Psychology, Personality Dynamics, Individual Assessment, Psychotherapy, Training Supervision.
	c. Chance, June E.	Ph.D.	Assistant Professor	Clinical Psychology, Child Development, Personality Theories, Psychotherapy, Language Behavior.
	d. Crane, Harry W.	Ph.D.	Professor	Clinical Psychology, Consulting, Mental Deficiency, Mental Hygiene, Physiological Psychology, Methods of Mental Examination.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
F. Ga. State				
	Psychology and Human Relations			
	a. Hamilton, G. Dewane (Agr.)	Ph.D.	Professor Head Rural Sociology	Rural Sociology.
	b. Lewis, Thaldon G. (Agr.)	M.A.	Assistant Professor	Rural Sociology.
	c. Hayes, Sara C. (Agr.)	Ed.D.	Professor	Rural Sociology.
H. Ill.				
	a. Adams, Dorothy G.	Ph.D.	Professor Chairman of Department	Psychological Statistics, Test Construction, Test Theory, Factor Analysis, Personnel Psychology.
	b. Bingham, W. Van	Sc.D.	Associate Professor Coordinator of Clinical Psychology Research Program, Research Assistant in Institute for Research in Social Science	Clinical Psychology, Experimentally Oriented Research, Psychological Supervision.
	c. Chapple, Jane E.	Ph.D.	Assistant Professor	Clinical Psychology, Child Development, Experimental Genetics, Psychodynamics, Language Problems.
	d. Drews, Harry W.	Ed.D.	Professor	Clinical Psychology, Counseling, Mental Hygiene, Mental Hygiene, Experimental Statistics, Theories of Mental Evaluation.

III-A cont. (Psychology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	e. Daniel, William J.	Ph.D.	Associate Professor	Learning, Conditioning, Current Theory, Comparative Psychology, General Experimental.
	f. Dashiell, John F.	Ph.D.	Kenan Professor	General Experimental, Fatigue and Efficiency, Mental-Neural Sets, History of Psychology, Contemporary Trends, Child Development.
	g. Jeffrey, Thomas E.	B.S.	Assistant Professor and Project Supervisor	Psychometric Laboratory, General Psychology, Psychological Statistics, Factor Analysis, Test Construction and Theory, Psychophysics, Personnel, Design of Experiments, Analysis of Data in Psychological Research.
	h. Kelton, John D.	B.S.	Lecturer and Project Supervisor, Psychometric Laboratory	General Experimental, Sensation and Perception, Learning, Psychophysics, Statistics, Factor Analysis, Design and Analysis of Experiments.
	i. Long, Eugene R.	Ph.D.	Associate Professor	General Experimental, Learning Theory, Sensation and Perception, Experimental Design, Teaching Methods.

Institution	Staff Member	Highest Earned Degree	Position	General Interests
U. S. D.	6. Daniel, William G.	Ph.D.	Associate Professor	Industry, Consultation, Quantum Theory, Objective Psychology, General Experimental.
	7. Fernald, John M.	Ph.D.	Local Professor	General Experimental, Medical and Clinical Psychology, Physical-Mental Data, Theory of Psychology, Developmental Psychology, Child Development.
	8. Duff-Cooper, Thomas G.	E.E.	Associate Professor and Psychiatrist Supervisor	Experimental Laboratory, General Psychology, Psychiatry, Mental Hygiene, Psychiatric Social Work, Psychiatric Research, Psychiatric Consultation and Therapy, Therapeutic Hypnosis, Psychiatric Diagnosis, Psychiatric Treatment of Drug Addiction, Forensic Psychiatry.
	9. Morley, John D.	B.C.	Instructor and Psychiatrist Supervisor, Parole Service Instructor	Abnormal Psychology, Psychiatric Interviewing, Psychiatric Diagnosis, Psychiatric Treatment, Psychiatric Research, Psychiatric Consultation, Psychiatric Social Work, Psychiatric Hypnosis, Psychiatric Testing and Analysis of Impressions.
	10. Lane, Jerome R.	Ph.D.	Associate Professor	General Experimental, Learning Theory, Sensation and Perception, Physiological Psychology, Experimental Analysis, Dynamic Psychology.

III-A cont. (Psychology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	j. McCurdy, Harold G.	Ph.D.	Professor	Social Psychology, Small Groups, Psychodynamics, Analysis of Phantasy, Growth and Learning, Child Development, General Psychology.
	k. Mellinger, John J.	B.S.	Assistant Professor and Project Supervisor, Psychometric Laboratory	Factor Analysis, Psychophysics and Subjective Measurement, Psychological Statistics and Experimental Design, Test Construction and Theory, Physiological, General, and Personnel Psychology.
	l. Thibaut, John W.	Ph.D.	Professor of Psychology and Sociology, Research Professor in Institute for Research in Social Science	Social Psychology, Small Group Theory, Social Perception, Socialization, Social Communication, Methods of Social Research.
	m. Welsh, George S.	Ph.D.	Associate Professor	Clinical Psychology, Personality Testing, Factor Analysis, Training of Clinical Psychologists, Relation of Clinical Psychology and Medicine, Visual Art and Communication.

2. Library Resources.

Duke

The library facilities of the Psychology Department are located in the Woman's College Library. The library is very well equipped, including practically all psychological periodicals and reference sources, and a very extensive monograph collection suitable for research in most fields of psychology.

N. C. State

See statement in "General Library Resources" for N. C. State College.

U. N. C.

The Psychology Department Library, located in the Psychology Building, currently subscribes to 56 journals. Twelve other journals are available through the main library. Periodicals and reference sources are reasonably complete for research in the fields of clinical, social, general experimental, theoretical, psychometric. All books are located in the main library. All the major publications in the field are available there.

3. Special Facilities and Equipment.

Duke

Special facilities include: laboratory for study of psychological problems in learning, motivation, perception; facilities for test construction and processing of such data, facilities for studying child behavior, a small machine shop for construction of psychological equipment, facilities for research in vision and in animal behavior, and facilities for study of small group behavior.

Special equipment includes: Skinner animal behavior boxes, tachistoscopes, equipment for visual limen and depth and spatial perception, pursuit rotors, polygraphs for measurement of autonomic responses, color sensitivity, IBM sorter, extensive equipment for study of human learning and motor performance.

N. C. State

Facilities adequate for carrying out investigations in areas of research pertinent to Psychology. Included are certain special facilities and equipment required by particular research programs and for precise measurements in general areas of research in the field.

U. N. C.

Special facilities in the Department of Psychology include: individual rooms for research and experimental training, an animal laboratory, an adequate shop, a journal library, testing rooms with one-way vision mirrors, photographic dark room, testing rooms, small punched card installation, drafting and layout installation, IBM test-scoring machine modified to perform matrix multiplication (rented).

Special equipment includes: memory drums, 14 calculating machines, conditioning apparatus (now being procured), Macbeth Illuminomoter, Berkeley counter, Behavior accumulator, polygraphy, tachistoscope, timers, chronoscopes, voltage sources and meters, mazes, physiological-neurological models, visual apparatus, lenses, etc., audio-oscillators, kymographs, movie projectors with and without sound film, slide projectors, tambours, oscilloscope, psychogalvanometers, dissecting instruments, transformers, Leeds and Northrup speedomar recorder, wire and tape recorders, aptitude, personality and achievement tests, Skinner boxes, discrimination units, food dispensers for Skinner box, quarters for housing small animals, program timers, relays, fractional horse-power motors, a 4 x 5 Dejur Professional Enlarger, a $2\frac{1}{4}$ x $3\frac{1}{4}$ Crown Graphic plate camera with a 4.7 Graflex Optar lens of 135 mm focal length, Bolex 16 mm motion picture camera, Model H-16 with Pizar f1.9 lens, focal length 26 mm, Bolex titler including optical bench, Remington Rand Portagraph machine, $9\frac{1}{2}$" x 15", Midgo-Print dryer, one Time Study Motion Picture Projector, Bell and Howell 16 mm, two Labelle model 302 automatic slide projectors, Leroy lettering set, Polar planimeter, Dietzgen, four chronoscopes, Standard Electric Time Co., Model S-1, automatic reset.

4. Major Areas of Present Research Activity.

Duke

a. Experimental study of perceptual and sensory processes.
b. Learning and motor performance.
c. Motivation.
d. Experimental study of personality.
e. Development of psychometric tests for aptitudes and interest.
f. Development of tests for personality assessment.
g. Study of child behavior.
h. Small group behavior.
i. Language and communication.
j. Experimental psychopathology.
k. Psychophysiology in humans and lower mammals.

III-A cont. (Psychology)

N. C. State

a. Evaluation of programs extending agricultural information.
b. Parental desires for young children.

U. N. C.

a. Methodological contributions to factor analysis.
b. Growth and development of primary mental abilities.
c. Development of various levels of reading comprehension tests.
d. Study of creative talent.
e. Selection of industrial foremen.
f. Development of new psychophysical techniques.
g. Factorial analyses of memory abilities.
h. Factorial analyses of visualization abilities.
i. Development of test battery for mechanical aptitude.
j. Task set and social conformity.
k. Internal flexibility and rigidity as determinants of the adaptability of social systems.
l. Perception of phenomenal causality.
m. Role of vision in spatial learning.
n. Monocular diplopia.
o. Level of aspiration in relation to anxiety.
p. Objectification of Rorschach Inquiry.
q. Inter-racial differences on projective figure-preferences.
r. Factor analysis of a projective figure-preference test.
s. Objective means of profile analysis.
t. Development of a high-level aptitude test.

PUBLIC HEALTH ADMINISTRATION

1. Staff Personnel.

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a.	Cameron, Charles M. (Public Health)	M.D.	Associate Professor	Community Safety, Home Accident Prevention, Medical Care.

III-A cont. (Public Health Administration)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	b. Wright, John J. (Public Health)	M.D.	Professor	Community Health Resources, T. B. Control, V. D. Control.

2. Library Resources.

U. N. C.

Our Department does not maintain its own library, but is served by the Library of the Division of Health Affairs.

3. Special Facilities and Equipment.

U. N. C.

Opague and slide projectors.

4. Major Areas of Present Research Activity.

U. N. C.

Home Accident Prevention.

RADIOLOGY

1. Staff Personnel

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Reeves, Robert J. (Med.)	M.D. F.A.C.R.	Director of Department	Fungus Cultures and X-ray Studies.

III-A cont. (Radiology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	b. Barry, William (Med.)	M.D.	Assistant Professor of Radiology, Acting Chief of Veterans Hospital Medical Student Teaching Program	Various Studies in Pancreatic Diseases.
	c. Baylin, George J. (Med.)	M.D.	In charge of Isotope Laboratory Research Program, Medical Student Teaching Program	Isotope Research Program.
	d. Isley, Joseph K. (Med.)	M.D.	Associate Director of Isotope Laboratory Research Program	Isotope Studies of Stool Fats in Humans.
	e. Sanders, Aaron P. (Med.)	M.S.	Director of Isotope Laboratory	I-131 Studies and Compiling Follow-Up Records.
	f. Shuford, Wade H. (Med.)	M.D.	Medical Student Teaching Program, Associate Radiologist	Lung Malignancy.
U. N. C.	a. Wood, Ernest H. (Med.)	M.D.	Professor of Radiology Director of Radiological Service, N. C. Memorial Hospital	Not furnished.
	b. Batten, Hubert E. (Med.)	M.D.	Instructor in Radiology	Not furnished.
	c. Bream, Charles A.	M.D.	Associate Professor of Radiology, Associate Attending Radiologist, N. C. Memorial Hospital	Not furnished.

Institution	Basic Degree	Highest Earned Degree	Position	Professional Contributions
Tufts	b. Eaton, Milton (Med.)	M.D.	Director of Radiology, Medical School, Director of Radiology, Medical Sciences Division, Tufts University	Various Research in Radiobiology.
	a. Begelin, George J. (Med.)	M.D.	In charge of Teaching Laboratory, Medical School, Director of Teaching Program	Isotope Research Program.
	c. Ilsley, Joseph E. (Med.)	M.D.	Associate Director of Tufts Laboratory, Research Program	Isotope Studies of Short Life in Humans.
	c. Sarnoff, Aaron I. (Med.)	M.D.	Director of Tufts Laboratory	B.M.R. studies and Conducting Follow-up Lectures.
	c. Shelburne, Dale H. (Med.)	M.D.	Medical Student Teaching Program, Associate radiologist	Long Martinsburg.
Ia. M. Ch.	a. Wood, Ernest H. (Med.)	M.D.	Professor of Biophysics, Director of Radiation Laboratory, Mayo Clinic	Not Available.
	b. Bartlett, Robert E. (Med.)	M.D.	Interested in Radiations	Not Available.
	c. Thomas, Charles A.	M.D.	Associate Professor of Radiation Therapy, Mayo Clinic	Not Available.

III-A cont. (Radiology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	d. Sprunt, W. H., III (Med.)	M.D.	Assistant Professor of Radiology, Assistant Attending Radiologist, N. C. Memorial Hospital	Not furnished.

2. Library Resources.

Duke

The Department of Radiology carries a fairly complete library of radiological literature, textbooks, reference books and complete journals of radiology and also the American Journal of Roentgenology. Most of these books are owned personally by Dr. Reeves. A certain number are from the Duke Hospital Library and given to the Radiology Library.

U. N. C.

In addition to the Medical Library resources available to this department are the following subscriptions: Acta Radiologica; American Journal of Roentgenology, Radium Therapy and Nuclear Medicine; Science; Radiology; Journal of the American Medical Association; Journal of the Faculty of Radiologists; New England Journal of Medicine; Journal of Neurosurgery; Cancer; British Journal of Radiology; Journal de Radiologie et d'Electrologie; Fortschritte auf dem Gebiete der Rontgenstrahlen.

3. Special Facilities and Equipment.

Duke

Radioisotope Laboratory Facilities.
- 3-Nuclear Scaling units and timers
- 1-Berkely Scaling unit
- 1-Aloe Scaling unit
- 2-Scintillation well counters
- 1-Gas Flow Counter
- 1-Shielded end window geiger counting unit
- 5-Scintillation Detectors (In vivo scanning)

Duke

5-Nuclear Counting rate meters
5-Esterline Angus 1 ma strip recorders
Radioisotope Laboratory - - - 475 square feet
Counting Room - - - - - - - - - 150 square feet
Associate Radioisotope Handling Equipment

U. N. C.

Diagnostic

a. Radiographic fluoroscopic motor driven tile table with motor driven spot film device, phototimed throughout, 300 ma. capacity at 120 kv. (Picker Constellation).
b. Radiographic fluoroscopic motor driven tilting table with motor driven spot film device, 500 ma. capacity at 130 kv. (Keleket C).
c. Radiographic fluoroscopic motor driven tilt table with motor driven spot film device, 200 ma. capacity at 100 kv. (Picker Constellation).
d. Radiographic horizontal table with motor driven laminagraph 300 ma. capacity at 120 kv. Ultrafine focal spot tube (0.3 mm.) for enlargement radiography. (Westinghouse) Same control operates special device for head radiography with special attachments for cerebral pneumography. (Picker Craniograph).
e. Radiographic horizontal table and stereo cassette changer phototimed throughout, 500 ma. capacity at 120 kv. (General Electric) Roentgen Kymograph (Liebel-Flarsheim).
f. Radiographic horizontal table, upright Bucky stand and angiographic device and stand, 300 ma. capacity 120 kv. (General Electric and Fairchild).
g. Photofluorographic unit, 70 mm. roll film camera, photoelectric timer, 200 ma. capacity at 100 kv. (General Electric and Fairchild).
h. Radiographic cystoscopic table 200 ma. capacity at 100 kv. (Westinghouse).
i. Radiographic cystoscopic table, 200 ma. capacity at 100 kv. (Westinghouse).
j. Vertical fluoroscope 30 ma., 90 kv. generator.
k. Mobile radiographic unit, 60 ma. capacity at 90 kv. (Picker).

Radiation Therapy

a. Deep roentgen therapy, twin column tubestand with split type transformer and condenser, 220 kv. - 20 ma., with assorted therapy cones, del Regato light beam localizer and Hay intracavitary attachment. (Picker).
b. Superficial and contact therapy unit with attached treatment couch, 60 kv. - 40 ma. (Picker Zephyr).

4. Major Areas of Present Research Activity.

Duke

a. Investigation of Gastrointestinal Digestion and/or Absorption in Sickness and in Health with Radioisotope Labeled Compounds.
b. Investigation of the Affects of Various Surgical Procedures Upon Digestion and/or Absorption in the G..I. Tract with Radioisotope Labeled Compounds.
c. Investigation of Kidney Function and Renal Blood Flow with Radioisotope Labeled Compounds.
d. Investigation of the Effects of X irradiation-in Humans and in Animals- Upon Gastrointestinal Digestion and/or Absorption with Radioisotope Labeled Compounds.
e. Investigation of Absorption of Compounds in the Large Bowel and Rectum in Illness and in Health with Radioisotope Labeled Compounds.
f. Investigation of Thyroid Clearance Following Iodine Saturation after Various Medical Procedures (G.B.Series, I.V.Ps.) with the use of Radioiodine.

All Programs Aimed at Development or Improvement of Diagnostic Procedures.

U. N. C.

Curtailed during past year due to pressure of routine clinical work. Some informal investigative studies regarding clinical value of enlargement radiography, value of Pitressin solutions in urographic diagnosis, use of certain heavy metal substances as contrast media, effect of radiation therapy on tumors of the optic nerves and chiasm, indications for and interpretation of cerebral angiograms and pneumograms in patients with cerebral thrombosis simulating brain tumor, radiologic changes in bones of patients with hematologic disorders, and Boeck's sarcoid material encountered during the past 2½ years.

SOIL SCIENCE

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	a. Baird, Bruce L. (Agr.)	M.S.	Instructor	Soil Fertility.

III-A cont. (Soil Science)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	b. Coleman, Nathaniel T. (Agr.)	Ph.D.	Professor	Soil Chemistry.
	c. Colwell, W. E. (Agr.)	Ph.D.	Professor and Assistant Director Experimental Station	Soil Fertility.
	d. Cummings, R. W. (Agr.)	Ph.D.	Professor and Director Research Agricultural Experimental Station	Soil Chemistry.
	e. Fitts, James W. (Agr.)	Ph.D.	Professor	Soil Fertility.
	f. Folks, Homer C. (Agr.)	Ph.D.	Assistant Professor	Soil Genesis.
	g. Gilbert, Matthew J. (Agr.)	B.S.	Instructor	Watershed Management.
	h. Harris, Donald G. (Agr.)	M.S.	Instructor	Soil Physics.
	i. Hunter, Arvel H. (Agr.)	M.S.	Instructor	Soil Fertility.
	j. Jackson, William A. (Agr.)	M.S.	Instructor	Soil Chemistry.
	k. Kamprath, Eugene J. (Agr.)	Ph.D.	Assistant Professor	Soil Fertility.
	l. Kaster, D. L. (Agr.)	B.S.	Instructor	Soil Classification.
	m. Lee, W. D. (Agr.)	B.S.	Associate Professor	Soil Classification.
	n. Lutz, J. F. (Agr.)	Ph.D.	Professor	Soil Physics.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	o. McAuliffe, Clayton D. (Agr.)	Ph.D.	Associate Professor	Soil Chemistry.
	p. McCaleb, Stanley B. (Agr.)	Ph.D.	Associate Professor	Soil Genesis and Classification.

2. Library Resources.

N. C. State

See statement in "General Library Resources" for N. C. State College.

3. Special Facilities and Equipment.

N. C. State

a. Mass spectrograph, with equipment for preparing gas samples for analysis.
b. Equipment for handling and counting radioactive isotopes including survey meters, scalers, automatic sample changers and recorders.
c. Multiple differential thermal analysis with controller and 6 point recorder.
d. Kjeldahl room with 48 electrically heated digestion and distillation unity.
e. Flame photometers, spectrophotometers, pH meters, conductivity apparatus, centrifuges, various kinds of shaking apparatus.
f. Pressure membrane apparatus (12 units).
g. Neutron source devices for measuring soil water.
h. Equipment for column and paper chromatography.

4. Major Areas of Present Research Activity.

N. C. State

a. Genesis of soils and their classification.
b. Nutrient status of soils and fertilizer use.
c. Irrigation.
d. Soil Physics.
e. Soil Chemistry.
f. Soil Conservation.

STATISTICS

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	a. Anderson, Richard L.	Ph.D.	Professor	Economics and Statistical Training.
	b. Carroll, Sarah P.	M.S.	Instructor	Statistical Methodology.
	c. Cockerham, Columbus C.	Ph.D.	Associate Professor	Quantitative Genetics.
	d. Comstock, Ralph E.	Ph.D.	Professor	Quantitative Genetics.
	e. Cox, Gertrude M.	M.S.	Professor, Director Institute of Statistics	Experimental Design and Psychology.
	f. Finkner, Alva L.	Ph.D.	Professor	Sampling.
	g. Fleischer, Jack	M.S.	Assistant Professor	Sampling.
	h. Grandage, Arnold H. E.	Ph.D.	Associate Statistician	Industrial Statistics.
	i. Hader, Robert J.	Ph.D.	Associate Professor	Industrial Statistics.
	j. Horvitz, Daniel G.	Ph.D.	Associate Professor	Sampling.
	k. Lucas, Henry L.	Ph.D.	Professor	Animal Science.
	l. Mason, David D.	Ph.D.	Professor	Plant Science.
	m. Monroe, John	M.S.	Associate Statistician	Sampling.
	n. Monroe, R. J.	Ph.D.	Professor	Biochemistry.

III-A cont. (Statistics)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
	o. Morrison, R. D.	M.S.	Assistant Statistician	Animal Science.
	p. Rigney, J. A.	M.S.	Professor, Head Department of Experimental Statistics	Plant Science.
	q. Robinson, Harold F.	Ph.D.	Professor	Genetics.
	r. Schuler, Joseph F.	Ph.D.	Assistant Statistician	Quantitative Genetics.
	s. Smart, W. W. G.	Ph.D.	Assistant Professor	Animal Nutrition.
	t. Smith, H. F.	M.S.A.	Professor	Biology.
	u. Verlinden, F. J.	M.S.	Assistant Professor	Computing.
U. N. C.				
	a. Nicholson, George E., Jr.	Ph.D.	Associate Professor Chairman of Department	Operations Research Methods, Applications in Physical and Social Sciences.
	b. Bose, R. C.	D.Litt.	Professor	Design of Experiments, Analysis of Variance.
	c. Hoeffding, Wassily	Ph.D.	Associate Professor	Probability Theory, Estimation, Decision Theory.
	d. Hotelling, Harold	Ph.D.	Professor, Associate Director of Institute of Statistics	Multivariate Analysis, Least Squares, Mathematical Economics.
	e. Roy, S. N.	M.S.	Professor	Multivariate Analysis, Statistical Inference.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	f. Smith, Walter L.	Ph.D.	Assistant Professor	Stochastic Processes, Probability Theory.

2. Library Resources.

N. C. State

An almost complete set of journals and books in statistics is available at the North Carolina State College Library and in the Institute of Statistics Library.

U. N. C.

One of the finest and most extensive statistics libraries in the entire world is located here.

3. Special Facilities and Equipment.

N. C. State

The Institute of Statistics has the largest research and teaching faculty in Experimental Statistics in the world, and it is responsible for training approximately one-fourth of all the advanced degree students in this subject in the U. S. in the past 5 years.

The Institute of Statistics has a set of International Business Machines for computing. These facilities will include an electronic machine within a few months. The Institute has a Survey Operations Unit with the maps and basic data needed for selecting samples.

U. N. C.

Special facilities include a computing laboratory.

4. Major Areas of Present Research Activity.

N. C. State

a. Sample Survey Theory and Methodology. Major problems being considered include

N. C. State

response errors, design of surveys intended for analytical rather than descriptive data, various schemes for drawing areas samples, the use of supplementary information, multiphase sampling on successive occasions, and the revision of Master Sample of Agriculture materials for use in the Southeast.

b. Design of Experiments for Industrial Research. This research has concentrated on multifactor experiments in which the effect of a number of independent variables on the response variable is explored. Extension of these techniques for use in field and greenhouse studies is also being undertaken.

c. Genetics of Quantitative Characters in Plants. Methods of estimating additive genetic variance, levels of dominance and the effects of linkage and epistasis on genetic variances and covariances; the design of experiments which will yield estimates of the above effects; and the execution of experiments in corn and other crops to provide actual estimates of these effects is the major emphasis of this program.

d. Pasture Research Techniques. This program involves the nature and magnitude of experimental errors inherent in currently used pasture evaluation techniques, and the development of more adequate procedures for comparing pasture performance in terms of actual animal product.

The State College Section of the Institute of Statistics participates heavily in consulting on other research programs within the State and outside, and there are numerous small studies in progress on statistical problems encountered in these consulting activities.

U. N. C.

a. Mathematical Economics.
b. Operations Research Methods.
c. Design of Experiments.
d. Decision Theory.
e. Stochastic Processes.
f. Multivariate Analysis.

SURGERY

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Hart, Deryl (Med.)	M.D.	Professor Chairman of Department	General Surgery.
	b. Alyea, Edwin Pascal (Med.)	M.D.	Professor of Urology	Urology.
	c. Anderson, William B. (Med.)	M.D.	Professor of Ophthalmology	Ophthalmology.
	d. Anlyan, William G. (Med.)	M.D.	Assistant Professor of Surgery	General and Thoracic Surgery.
	e. Arnold, Ralph A. (Med.)	M.D.	Associate Professor of Otolaryngology and Ophthalmology	Otolaryngology and Ophthalmology.
	f. Baker, Lenox Dial (Med.)	M.D.	Professor of Orthopaedic Surgery	Orthopaedic Surgery.
	g. Beard, Dorothy W. (Med.)	R.N.	Associate in Surgery and Research Associate in Experimental Surgery	Experimental Surgery.
	h. Beard, Joseph W. (Med.)	M.D.	Professor of Surgery in Charge of Experimental Surgery and Associate Professor of Virology	Experimental Surgery and Virology.

III-A cont. (Surgery)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	i. Beaudreau, George S. (Med.)	Ph.D.	Research Associate in Experimental Surgery	Microbiology.
	j. Bloor, Byron M. (Med.)	M.D.	Associate in Neurosurgery and Chief of Neurosurgical Service of Veterans Hospital, Durham, N. C.	Neurosurgery.
	k. Bonar, Robert A. (Med.)	Ph.D.	Research Associate in Experimental Surgery	Biochemistry.
	l. Boone, Alexander W. (Med.)	M.D.	Assistant Professor of Urology.	Urology.
	m. Brown, Ivan W., Jr. (Med.)	M.D.	Associate Professor of Surgery	General Surgery.
	n. Bugg, Everett I., Jr. (Med.)	M.D.	Associate in Orthopaedic Surgery	Orthopaedic Surgery.
	o. Coonrad, Raphael W. (Med.)	M.D.	Instructor in Orthopaedic Surgery	Orthopaedic Surgery.
	p. Cooper, Frank B. (Med.)	M.D.	Instructor in Ophthalmology and Otolaryngology	Ophthalmology and Otolaryngology.
	q. Dees, John E. (Med.)	M.D.	Professor of Urology	Urology.
	r. Dent, Sara J. (Med.)	M.D.	Instructor in Anesthesiology	Anesthesiology.
	s. Eagle, Watt W. (Med.)	M.D.	Professor of Otolaryngology	Otolaryngology

Date	Participant	Spell Number	Correct Answer	Position	Special Conditions
1.	Brothers' Gerald H.	(1951)	M.D.	Resident in Pediatrics to Children's Hospital	
2.	Fuller' Ruth E.	(1951)	M.D.	Intern in Pediatrics to Children's Hospital	
3.	Ferst' Robert E.	(1951)	M.D.	Resident in Pediatrics	Recorded
4.	Cooper' Robert H.	(1951)	M.D.	Instructor in Pediatrics to Children's Hospital	Medical Center and Children's Hospital
5.	Gardner' Robert H.	(1951)	M.D.	Instructor in Pediatrics to Children's Hospital	Medical Center Guest
6.	Kelly' Robert I.	(1951)	M.D.	Associate in Pediatrics to Children's Hospital	Medical Center Guest
7.	Brown' Yale H.	(1951)	M.D.	Associate in Pediatrics, Medical School of Virginia	Medical School
8.	Fletcher' Elizabeth H.	(1951)	M.D.	Pediatric Associate in Medical School of Virginia	Medical School
9.	Grant' Robert T.	(1951)	Ph.D.	Research Associate in Pediatrics in Medical School of Virginia	Medical School
10.	Stock' Elson H.	(1951)	M.D.	Associate in Pediatrics in Medical School of Virginia	Medical School
11.	Burgdorf' Gerald E.	(1951)	Ph.D.	Research Associate in Pediatrics in Medical School of Virginia	Medical School

III-A cont. (Surgery)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	t. Fabian, Leonard W. (Med.)	M.D.	Assistant Professor of Anesthesiology	Anesthesiology.
	u. Ferguson, George B. (Med.)	M.D.	Associate in Bronchoscopy	Bronchoscopy.
	v. Gardner, Clarence E. (Med.)	M.D.	Professor of Surgery	General Surgery.
	w. Georgiade, Nicholas G. (Med.)	D.D.S. M.D.	Assistant Professor of Plastic Surgery	Plastic Surgery.
	x. Glasson, John (Med.)	M.D.	Instructor in Orthopaedic Surgery	Orthopaedic Surgery.
	y. Goldner, J. Leonard (Med.)	M.D.	Associate Professor of Orthopaedic Surgery	Orthopaedic Surgery.
	z. Grimson, Keith S. (Med.)	M.D.	Professor of Surgery	General Surgery.
	aa. Martin, Ruth C. (Med.)	M.D.	Associate Professor of Anesthesiology	Anesthesiology.
	bb. Odom, Guy Leary (Med.)	M.D.	Professor of Neurosurgery	Neurosurgery.
	cc. Ormandy, Roderick (Med.)	Ph.D.	Assistant Professor Medical Speech Pathology	Medical Speech Pathology.
	dd. Peete, William P. J. (Med.)	M.D.	Assistant Professor of Surgery and Assistant to the Dean	General Surgery

III-A cont. (Surgery)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	ee. Pfeiffer, Kenneth R. (Med.)	D.D.S.	Instructor in Dentistry and Chief of Dental Service, Veterans Hospital, Durham, N. C.	Dentistry.
	ff. Pickrell, Kenneth L. (Med.)	M.D.	Professor of Plastic Surgery	Plastic Surgery.
	gg. Postlethwait, Raymond (Med.)	M.D.	Associate Professor of Surgery and Chief of Surgical Service, Veterans Hospital, Durham, N. C.	General and Thoracic Surgery
	hh. Ross, Norman F. (Med.)	D.D.S.	Associate in Dentistry	Dentistry.
	ii. Sapp, Baxter B., Jr. (Med.)	D.D.S.	Instructor in Dentistry	Dentistry.
	jj. Schiebel, H. Max (Med.)	M.D.	Associate in Surgery	General Surgery.
	kk. Sealy, Will C. (Med.)	M.D.	Associate Professor of Surgery in Charge of Thoracic Surgery	Thoracic Surgery.
	ll. Semans, James H. (Med.)	M.D.	Associate Professor of Urology	Urology.
	mm. Sharp, D. Gordon (Med.)	Ph.D.	Associate Professor of Biophysics in Experimental Surgery	Biophysics.
	nn. Shingleton, William W. (Med.)	M.D.	Assistant Professor of Surgery	General Surgery.

III-A cont. (Surgery)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
Duke	oo.	Stephen, Charles R. (Med.)	M.D.	Professor of Anesthesiology	Anesthesiology.
	pp.	Stocker, Frederick W. (Med.)	M.D.	Associate Professor of Ophthalmology	Ophthalmology.
	qq.	Warshauer, Albert D. (Med.)	M.D.	Assistant Professor of Anesthesiology and Chief of Anesthesiology, Veterans Hospital, Durham, N. C.	Anesthesiology.
	rr.	Woodhall, Barnes (Med.)	M.D.	Professor of Neurosurgery	Neurosurgery.
	ss.	Wrenn, Richard N. (Med.)	M.D.	Associate in Orthopaedics and Chief of Orthopaedic Service, Veterans Hospital, Durham, N. C.	Orthopaedics.
U. N. C.	a.	Womack, Nathan A. (Med.)	M.D.	Professor Chairman of Department	General Surgery, Surgical Pathology.
	b.	Brashear, H. Robert (Med.)	M.D.	Assistant Professor	Orthopedic Surgery.
	c.	Bunce, Paul L. (Med.)	M.D.	Assistant Professor	Urology, Isotope Techniques.
	d.	Davis, Davis A. (Med.)	M.D.	Professor	Anesthesiology.
	e.	Dugger, Gordon S. (Med.)	M.D.	Assistant Professor	Neurosurgery.

III-A cont. (Surgery)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	f. Fischer, Newton D. (Med.)	M.D.	Assistant Professor	Otolaryngology.
	g. Grosskreutz, Doris C. (Med.)	M.D.	Assistant Professor	Anesthesiology.
	h. Heusner, A. Price (Med.)	M.D.	Professor	Neurosurgery.
	i. McPherson, Sam D. (Med.)	M.D.	Clinical Associate Professor	Ophthalmology.
	j. Patterson, Hubert C. (Med.)	M.D.	Assistant Professor	General Surgery.
	k. Peebles, Charles H. (Med.)	M.D.	Clinical Instructor	Ophthalmology.
	l. Peters, Richard M. (Med.)	M.D.	Associate Professor	Thoracic Surgery, Respiratory Physiology.
	m. Raney, R. Beverly (Med.)	M.D.	Professor	Orthopedic Surgery.
	n. Sugioka, Kenneth (Med.)	M.D.	Assistant Professor	Anesthesiology.
	o. Thomas, Colin G., Jr. (Med.)	M.D.	Associate Professor	General Surgery, Plastic Surgery, Isotope Techniques.
	p. Wells, Warner L. (Med.)	M.D.	Assistant Professor	General Surgery, Medical History.

2. Library Resources.

Duke

Department of Surgery Library. Bound Journals: American Journal of Surgery; Annals of Surgery; Archives of Surgery; British Journal of Surgery; International Abstracts of Surgery; Surgery; Surgery, Gynecology and Obstetrics; Journal of the American Medical Association.

U. N. C.

Medical Library, U. N. C. Library.

3. Special Facilities and Equipment.

Duke

Special facilities include: a complete laboratory for surgical physiology and biochemistry; experimental animal laboratory for research in general surgery; urological laboratory; laboratory for blood preservation and related problems; isotope laboratory; plastic research laboratory with facilities for animal studies; speech pathology laboratory; surgery clinical research laboratories with facilities for study of animals, acute and chronic experiments; and facilities for study of patients of research interest with gastrointestinal or cardiovascular problems; facilities for biomicroscopy of living cornea, tonometric recordings of intro-ocular tension, corneal transplant procedure, and a retinal camera; animal and biochemical laboratories for studies in anesthesiology; fully-equipped Brace Shop for manufacturing braces and prostheses; research laboratory for study of tendons in animals; physical therapy and rehabilitation facilities; and clinic facilities for special orthopaedic problems; N. C. Cerebral Palsy Hospital (40 beds, state supported); neuropathological research laboratory; neurophysiological laboratory with electronic equipment for intravascular pressure studies and cortical oxygen tension studies, and peripheral nerve pathological laboratory; surgical instrument shop and electronic equipment shop; rehabilitation conference setup for study of the physical and vocational problems of spinal injury patients; laboratories equipped for general biological use and immunological use, for biochemical and biophysical investigations in the field of electrophoresis and ultracentrifugation; laboratories for operative experimental surgery; facilities for maintenance of laying hens, incubation of eggs and brooder and broiler batteries; facilities for cardiovascular and pulmonary physiology research.

Duke

Special equipment includes: centrifuge, chemical balances, Beckman pH meter, Coleman Jr. Spectrophotometer, water baths, drying oven, Cohn blood fractionator, low temperature refrigeration equipment, recording devices, isotope scaler, high pressure equipment, photographic and x-ray equipment, spectrophotometers, phase microscopic equipment, Van Slyke, Warburg apparatus, low temperature refrigerator for preservation of arteries, skin, fascia, cartilage and corneas in a viable state, kymographs for intubation balloon studies, equipment for studying skin temperature and resistance, fluoroscopic equipment, 300-milliampere aortographic unit, animal surgery equipment, Zeiss slit lamp, Haag Striet slit lamp, electric tonometer and recorder, Sanborn 4-channel multi-purpose recorder, Grass oscilloscope, Statham strain gauges, McKesson BMR machine, Palmer respiratory pump; Jefferson ventilator, Emerson ventilator, circulation pump and respiration recorder; all types of orthopaedic surgical equipment for traction, brace shop equipment for manufacturing braces and prostheses, physical therapy equipment, and motion picture and still photographs for teaching and research in orthopaedics; equipment for research in pathological tissue (Neurosurgical) and electronic equipment for intravascular pressure studies and cortical oxygen tension studies; electron-microscope, electrophoresis apparatus, air-driven ultracentrifuges and other equipment for biological, biochemical and biophysical research; audiometers; cystoscopy equipment, tape recorders, and cystoscopic camera and teleprobe (on loan from V. A. Hospital); equipment for cardiovascular and pulmonary physiological research.

U. N. C.

Departmental equipment includes all routine laboratory equipment.

4. Major Areas of Present Research Activity.

Duke

a. Blood coagulation, with special emphasis on the causes and effects of hypercoagulability.
b. Cancer immunology; study of antigenic differences in cancer and normal tissue.
c. Pancreatic physiology: nutrition in disease studied by radio-isotopes; clinical and experimental studies in shock.
d. Research in urological problems: stones, cancer, etc.
e. Tissue preservation including cellular elements of blood, skin, bone and blood vessels: blood volume determination, cell survival studies, methods of cell counting and platelet counting, platelet concentration and transfusion, red cell metabolism, oxygenation of blood for use in intracardiac surgery.

Duke

f. Tissue culture, dermal grafts and their clinical use; tissue preservation.
g. Hypertension, sympathectomy, and drugs.
h. Peptic ulcer, vagotomy and gastroenterostomy, and drugs.
i. Abdominal viscera pain and celiac ganglionectomy.
j. Peripheral vascular disease and aortic disease, sympathectomy, homografts, plastic tubes, etc.
k. Studies of drug toxicity and actions related to surgical problems.
l. Associate study of a geriatric project (ophthalmological field).
m. Study of melanoma and its incidence.
n. Cholesterol indices in individuals with Fuchs' dystrophy.
o. Respiration: effects of pH and CO_2 disturbances, action of muscle relaxant drugs on respiratory patterns.
p. Circulation - hemorrhagic shock, effect of adrenolytic, parasympatholytic and ganglionic-blocking drugs in modifying such shock.
q. Trichloroethylene - degree of interaction with soda-lime (chemical).
r. Clinical research on the healing of tendons with animal studies.
s. Studies of accidents by power lawnmowers.
t. Developing of surgical procedures in the treatment of cerebral palsy.
u. Cause and treatment of Volkmann's contractures.
v. Severe athletic injuries and their treatment for rapid rehabilitation.
w. Development of the team approach to the rehabilitation of the paraplegic.
x. Use of Thorazine therapy in extremity and musculoskeletal pain.
y. Development of amputation clinic and improvement in prostheses for upper and lower extremities; muscle function studies.
z. Brain tumor pathology; cerebral vascular physiology.
aa. Effect of antihistamines on nasal membranes.
bb. Physical and chemical properties of animal viruses, including equine encephalomyelitis, influenza viruses of man and swine, mumps, Newcastle disease, bacteriophage, papilloma virus and viruses of avian leukemia; preparation of vaccine against equine encephalomyelitis and influenza.
cc. Diseases and injury of the genitourinary tract; clinical and experimental investigation of the effects on the genitourinary tract of injury or disease of the spinal cord.
dd. Coordination of professional personnel in the management of diseases requiring the service of 7 to 10 departments in the Hospital.
ee. Thrombophlebitis (postoperative) followup study.
ff. Postoperative peptic ulcer followup study.
gg. Effect of overexpansion of the lung on cardiopulmonary function.

Duke

hh. Effect of basilar cardiac denervation and cardiopneumonopexy on ventricular fibrillation after acute coronary occlusion.
ii. Hypothermia and perfusian for open cardiac surgery.
jj. Changes in pulmonary function after overdistention.

U. N. C.

a. The stimulation of longitudinal bone growth in rabbits by placing nylon sheeting about the femoral shaft.
b. Investigation of the metabolism of urinary bladder papillomata in the human by means of the differential radio-phosphorus uptake of the tumor compared with that of normal bladder mucosa in the same patient.
c. An experimental study in reversal of the renal circulation to determine whether or not a normal glomerular kidney can be converted to an aglomerular kidney by alteration of the circulatory pattern.
d. A study of the effects of the inhalation of high concentrations of carbon dioxide and the sudden withdrawal of carbon dioxide on the serum electrolytes, body water and cardiac function of the dog.
e. A study of the effects of inhalation anesthetic agents on the intracranial pressure of the curarized dog.
f. Preparation of a monograph on anesthesia in neurological surgery.
g. Studies in cerebral blood flow.
h. Evaluation of bouginage in the treatment of caustic burns of the esophagus.
i. Innervation of the larynx.
j. A comparison of the effects of muscle relaxant drugs in the normal and hypokalemic rabbit.
k. Preliminary investigation of an antihistamanic drug, promethazine, in modifying the action of intravenous anesthetic agents.
l. Extracting lipids from blood and injecting it into rabbit joints, tendons and bone to study the reaction of local tissue to the foreign lipid.
m. Surgical treatment of experimental hydrocephalus in dogs.
n. Effect of progesterone and cortiscone on spontaneous mammary cancer in L3H M5U.
o. Possible uses of isolated loops of smooth gut for pedicle grafts in dogs.
p. Reevaluation of destruction of androgens by the liver in mice.
q. The effects of increased concentrations of carbon dioxide in the inspired air on pulmonary blood flow in the dog.
r. Relationship between per cent of carbon dioxide in inspired air and degree of bronchoconstriction.
s. Experiments with dogs on the "production of Hirschsprung's Disease."

U. N. C.

t. Study of production of chronic thyroiditis in dogs.
u. Radiogold in treatment of experimental ascites.
v. Clinical study of hormonal factors in treatment of carcinoma of the thyroid.
w. Carcinoma of the gallbladder in mice, production by installation of carcinogenic agents.
x. Gallstone formation in hamsters.
y. Esophageal varices in dogs, attempted production on the theory of A-V fistulas.
z. Studies relating to endothelial injury.
aa. Experimental work in vessel substitutes.
bb. Effect of hormones on normal occurrence of breast cancer in C3H mice.
cc. Production of testicular tumors in mice.

TEXTILE RESEARCH

1. Staff Personnel.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State				
a.	Asbill, Clarence M. Jr.	B.S.	Head, Department of Machine Design and Development	Machinery Engineering and Instrumentation.
b.	Barnard, Ralph G.	B.S.	Laboratory Supervisor	Cotton Yarn Manufacturing.
c.	Bogdan, John F.	B.S.	Director of Processing Research	Yarn Manufacturing.
d.	Bradford, Edward H.	B.S.	Laboratory Supervisor	Synthetic Yarns Manufacturing.
e.	Campbell, Kenneth S.	B.S.	Professor, Textile Chemistry	Dyeing and Finishing.

III-A cont. (Textile Research)

Institution		Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	f.	Campbell, Malcolm E.	B.S.	Dean, School of Textiles	Cotton Fiber Technology.
	g.	Cates, David M.	Ph.D.	Assistant Director, Chemical Research	Textile Chemistry.
	h.	Cranor, Winifred	B.S.	Research Associate	Textile Chemistry.
	i.	Gilbert, Edward B.	M.S.	Laboratory Supervisor	Yarn Manufacturing.
	j.	Grover, Elliott B.	B.S.	Head, Department of Fiber and Yarn Technology	Yarn Manufacturing and Testing.
	k.	Hamby, Dame S.	B.S.	Professor, Textile Manufacturing	Textile Testing, and Quality Control.
	l.	Kirby, Rosa D.	B.S.	Research Associate	Textile Chemistry.
	m.	Mangum, G. Dent	B.S.	Manager, Processing Research Division	Cotton Fiber.
	n.	Newell, William A.	B.S.	Director of Textile Research	Research Administration.
	o.	Randolph, G. Meares	B.S.	Research Associate	Dyeing.
	p.	Rutherford, Henry A.	M.S.	Head, Department of Textile Chemistry	Fiber Chemistry.
	q.	Shinn, William E.	B.S.	Head, Department of Knitting Technology	Knit-goods Manufacturing.
	r.	Teszler, Otto	B.S.	Research Associate	Textile Physics and Chemistry.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
N. C. State	s. Waters, William T.	M.S.	Research Associate	Textile Physics.
	t. Whittier, Benjamin L.	B.S.	Head, Department of Fabric Development	Industrial Fabric Development.
	u. Woo, Henry K. C.	M.S.	Research Associate	Statistics.
	v. Woodbury, Arthur J.	--	Laboratory Supervisor	Yarn Manufacturing.
	w. Yachan, Emilio	M.S.	Research Associate	Administration.

2. Library Resources.

N. C. State

Textile Library available in the Textile Building. It is one of the most complete collections in the world.

3. Special Facilities and Equipment.

N. C. State

Complete cotton, woolen, and American worsted systems are available, with a wide diversification of equipment in the cotton system; complete and modern opening line for cotton or synthetic fibers, including two blend feeders, a vertical opener, a No. 11 opener, and a Superior cleaner; a one-process Saco-Lowell picker and two finisher pickers comprise the picking equipment. Three spinning-unit laboratories, each are available for processing fiber from lap to yarn in the same room. The carding machines in these rooms are equipped with variable-speed drives on the various revolving elements and other devices for flexibility in making processing changes. Should other carding facilities be required, four other cotton-system cards are available. Three of these are equipped with fillet, metallic, and Strip-O-Matic clothing respectively, and the fourth card is the roller-type for handling long-staple fibers. A wide variety of drawing frames of all types is available, as well as the latest types of Whitin (Model J) and Saco-Lowell (Model 54)

N. C. State

combers with suitable combing-preparation equipment, and older-model combers.

Complete continuous-filament-handling equipment includes cake soaking, extracting, and conditioning equipment, redraw frames, throwing frames (U. S. Textile and Universal), single-end sizer, and coners of various types.

For warp-preparation, both high-speed and silk-system warping equipment is available. Sizing equipment includes a Model 51 Callaway experimental slasher and an up-to-date, instrument-controlled five-can Crocker slasher equipped for overwaxing. Also available are 65 looms of various types; a beck, enclosed jig, Williams unit, hosiery dyeing unit, a Tube-Tex unit, several package-dyeing units with capacities ranging from 1 to 40 lbs., a tenter-dryer, loop and resin-curing dryer and 3-roll calender.

Two chemical laboratories are available for laboratory research; one equipped for dyeing experiments contains steam baths, flame spectrophotometer, Fade-Ometers, Launder-O-Meter, Weather-O-Meter, Hunter reflectometer, etc.; the other is equipped for micro-chemical analyses.

Knitting equipment for half-hose, full-fashioned hosiery, underwear and outer-wear fabric, and tricot fabric are available, a total of 78 machines in all, including a sample tricot machine and looping and garment-cutting and sewing equipment.

Physical-testing laboratories are among the best-equipped in the nation, and have a lighting system designed to provide 80 foot candles of light at the operating level. In addition to the usual types of reels, scales, Scott skein testers, Suter-Webb and Pressley instruments, seriplanes, etc., equipment includes Wyzenbeek, Taber, Schiefer, and Stoll abraders; two Uster and one Brush yarn-uniformity testers; two Uster automatic single-strand yarn-strength testers, the Draftometer, a strain-gage type electronic instrument for measuring and recording drafting forces; two Instron electronic tensile testers (one with integrator), an instrument for measuring and recording static on yarns; a Scott-Clemson fiber-strength tester; the N. C. State-Wright Nepotometer; Stoll-Celanese wrinkle tester; SRRL fiber blender; and other instruments of the latest types. One Instron tensile-testing instrument is being equipped with special equipment for conducting tests at temperatures ranging from -70° F. to 400° F.

N. C. State

A microscopy laboratory provides complete equipment for use of the microscope in research, including a Projectine projection microscope.

4. Major Areas of Present Research Activity.

N. C. State

a. Fiber evaluation.
b. Chemical products.
c. Application research.
d. Nylon-processing improvement.
e. Dacron-processing improvement.
f. Fiber characterization studies.
g. Bleaching-improvement studies.
h. Fabric development.
i. Dyeing studies.
j. Warp-size evaluation.
k. Six-mill cooperative research on reducing waste in cotton carding.
l. Sixteen-mill cooperative research on increasing cotton-card production.
m. Ten-mill cooperative research on reducing comber waste.
n. Airship-envelop fabric development.
o. Product evaluation.
p. Research on relation of fabric construction to flammability.
q. Development of nep-potential-measuring instrument.
r. Evaluation of cotton fiber mercerized without tension.
s. Studies of chemical degradation of parachute fabrics.
t. U. S. Army classified project.
u. Research and development on nep-forming tendencies of cotton and the Nepotometer.
v. Determination of effects of nuclear radiation on textile fibers and polymers.
w. Manufacture of cigarette-filter material.

ZOOLOGY

1. Staff Personnel

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	a. Gray, Irving E.	Ph.D.	Professor Chairman of Department	Ecology, Entomology, Marine Zoology.

III-A cont. (Zoology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
Duke	b. Bailey, Joseph R.	Ph.D.	Associate Professor	Systematics, Evolution, Zoogeography.
	c. Bookhout, Cazlyn G.	Ph.D.	Professor, Director of Duke University Marine Laboratory	Histology and Embryology of Marine Invertebrates.
	d. Horn, Edward C.	Ph.D.	Associate Professor	Vertebrate Morphogenesis.
	e. Hunter, Wanda S.	Ph.D.	Associate Professor	Parasitology.
	f. Nace, George W.	Ph.D.	Assistant Professor	Chemical Embryology.
	g. Odum, Howard T.	Ph.D.	Assistant Professor	Limnology, Oceanography.
	h. Roberts, Henry S., Jr.	Ph.D.	Associate Professor	Cytology, Histology.
	i. Sandeen, Muriel I.	Ph.D.	Assistant Professor	Invertebrate Endocrinology.
	j. Schmidt-Nielsen, Knut	Ph.D.	Professor	Comparative Physiology.
	k. Vernberg, F. John	Ph.D.	Assistant Professor	Physiological Ecology, Especially of Arthropods.
	l. Ward, Calvin L.	Ph.D.	Instructor	Cytogenetics.
	m. Wilbur, Karl M.	Ph.D.	Professor	Cellular Physiology.
N. C. State	a. Barkalow, Frederick S. (Agr.)	Ph.D.	Professor Head of Department	Zoology, Wild Life Management.

III-A cont. (Zoology)

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	a. Costello, Donald P.	Ph.D.	Kenan Professor Chairman of Department	Experimental Embryology of Invertebrates, Experimental Cytology; Effects of Radiation on Cells in Salamander Tail Tips.
	b. Beers, C. Dale	Ph.D.	Professor	Protozoology; Studies of Parasitic Ciliates of Invertebrates.
	c. Carriker, Melbourne R.	Ph.D.	Associate Professor	Ecology; Studies of Oyster Drill.
	d. Coker, Robert E.	Ph.D. Sc.D.	Kenan Professor Emeritus	Marine Biology.
	e. Engels, William L.	Ph.D.	Professor	Vertebrate Zoology; Photoperiodism in Birds.
	f. Henley, Catherine	Ph.D.	Research Associate	Experimental Cytology; Effects of Radiation on Cells in Salamander Tail Tips.
	g. Humm, Douglas G.	Ph.D.	Associate Professor	General Physiology; Melanomas in Fishes.
	h. Jenner, Charles E.	Ph.D.	Associate Professor	Marine and Freshwater Ecology; Photoperiodism in Invertebrates.
	i. Jones, Claiborne S.	Ph.D.	Associate Professor	General Zoology; Mechanism of Nematocyst Discharge.

Qualifications	Staff Member	Highest Earned Degree	Position	Special Competence
D. M. Q.				
a.	Costello, Donald P.	Ph.D.	Emeritus Professor Chairman of Department	Experimental Embryology of Invertebrates, Experimental Cytology, Effects of Radiation on Cells in Salamander Test Tube.
b.	Davis, O. Dale	Ph.D.	Professor	Electrobiology, Studies of Physiologic Gradients of Eggs of Invertebrates.
c.	Guerlian, Malcolm D.	Ph.D.	Associate Professor	Embryo Ecology of Upper Delta.
d.	Cohen, Robert S.	Ph.D. Sc.D.	Emeritus Professor Lecturer	Marine Biology.
e.	Dreyer, William L.	Ph.D.	Professor	Parasitology-Zoology; Photomicrography in Color.
f.	Herring, Cathcart	Ph.D.	Research Associate	Experimental Cytology; Effects of Radiation on Cells in Salamander Test Tube.
g.	Moore, Thomas O.	Ph.D.	Associate Professor	General Parasitology; Malignancy in Fishes.
h.	Turner, Charles E.	Ph.D.	Associate Professor	Water and Freshwater Ecology; Thermoregulation in Invertebrates.
i.	Jones, Cathcart S.	Ph.D.	Associate Professor	General Zoology; Physiology of Invertebrates; Limnology.

Institution	Staff Member	Highest Earned Degree	Position	Special Competence
U. N. C.	j. Lehman, H. Eugene	Ph.D.	Associate Professor	Experimental Embryology of Vertebrates; Cell Migration in Embryonic Tissues.
	k. Whittinghill, Maurice	Ph.D.	Professor	Genetics; Study of Arthritis in a Large Pedigree, and Recombination and Mutation in Drosophila Following Radiation.

2. Library Resources.

Duke

The Biology Library located in the Biology Building has 53,343 volumes and subscribes to 347 journals.

N. C. State

The Zoology section of the Division of Biological Sciences has excellent library facilities in the field of wildlife research and animal ecology.

U. N. C.

The Zoology Department Library, located in Wilson Hall, has approximately 7,500 volumes and approximately 15,000 separates in the Wilson reprint collection. Most of the periodicals are complete; efforts are being made to complete all important series. Other very useful zoological periodicals are available at the library of the Division of Health Affairs which is located a short distance from Wilson Hall. The two libraries cooperate in exchanging periodicals.

3. Special Facilities and Equipment.

Duke

Special facilities include photographic dark rooms; cold rooms; rooms for maintaining animal colonies; laboratory for limnological research; Marine Laboratory at Beaufort, N. C.

Special equipment includes: Spectrophotometers; Warburg apparatus, Refrigerated centrifuges; X-ray machine (260 KVP, 15 ma.); constant temperature cabinet; drying ovens; Roller-Smith torsion balances; time-lapse photographic apparatus; phase microscopes; interference microscope; Chambers and DeForbrune micromanipulators; photomicrographic camera; Cartesian diver equipment; micro glass-blowing equipment; micro-centrifuge; 3000-egg chick incubator; Deep-freeze; aluminum boat with trailer; thermistor bridge; Clarke-Bumpus plankton samplers; 27 foot and 38 foot power boats; rowboats; dredges, trawl, etc.; outboard motors.

N. C. State

Special facilities include a temperature controlled laboratory for parasitological research.

U. N. C.

Special facilities include a small radioisotope laboratory for treatment of invertebrate material with radioisotopes (adequate shielding is included); a temporary wooden building equipped for work in general physiology, especially on respiration problems; a room, plus numerous cabinets with constant temperature equipment and automatic lighting equipment for photoperiodism studies; air conditioned operating room for amphibian experimental embryology; air conditioned research laboratory for Drosophila genetics.

Special equipment includes polorization microscope, phase microscope, equipment for cinematographic photomicrography; two scalers and several monitors for radioisotope work; cartesian diver ultramicromanometer; Warburg and other special respirometers; various types of photomicrographic equipment; and the usual microscopes.

4. Major Areas of Present Research Activity.

Duke

a. Classification and distribution of neotropical reptiles and amphibians.

Duke

b. Natural history and distribution of North Carolina cold-blooded vertebrates.
c. Ecology of cave salamanders.
d. Ecology of soil animals.
e. Ecology and development of marine fouling organisms.
f. Embryology of marine annelids.
g. Morphology and development of insects and crustaceans.
h. Comparative studies of gill areas of fishes and crabs.
i. Metabolism studies of parasites, insects, crabs, fishes, tissues.
j. Nucleoprotein changes during development.
k. Productivity of streams; ecological microcosms.
l. Cell division studies on living cells.
m. Biochemistry of living cells.
n. Biochemistry of fat metabolism.
o. Invertebrate endocrines and their effects.
p. Physiology of desert animals.
q. Biological effects of radiations.

N. C. State

a. Wild life management.

U. N. C.

a. Completion of certain projects in experimental cytology dealing with effects of various agents on mitosis in animal cells.
b. Investigation of the comparative functional morphology of the feeding mechanisms and ecology of predatory gastropods.
c. The embryology and metabolism of melanomas of known genetic backgrounds.
d. Investigations on animal photoperiodism, and also work on photoperiodism of birds.
e. Cell migration, tissue affinities, and pigment cell patterns.
f. A study of genetic recombination as influenced by mutagenic and nonmutagenic environmental agents.

III cont.

B. STUDENTS

Institution	Field	Degrees Awarded 1954-1955			Majors in Course, Sept. 1955	
		Bachelors	Masters	Doctors	Bachelors	Graduates
Duke						
	Anatomy	0	1	2	0	3
	Biochemistry and Nutrition		1	4		14
	Botany	5	4	1	6	25
	Chemistry	8	5	10	106	36
	Economics	110	4	1	400	20
	Engineering:					
	Civil	12			91	
	Electrical	17			108	
	Mechanical	37			136	
	Forestry		17	2		34
	Geology	2			16	
	Mathematics	13	1	2	24	12
	Medical School			80		314
	Medicine					46
	Microbiology					8
	Pediatrics					20
	Physics	7	3	8	40	40
	Physiology and Pharmacology					7
	Psychology	60		1	90	41
	Surgery					70
	Zoology	17	4	4	82	26
N. C. State						
	School of Agriculture:					
	Agr. Economics	3	5	3	30	10
	Agr. Engineering	10	3	0	63	6
	Agronomy	14	9	3	53	42
	Animal Industry	42	10	8	84	26
	Dairy Manufacturing				28	10

III-B cont.

Institution	Field	Degrees Awarded 1954-1955			Majors in Course, Sept. 1955	
		Bachelors	Masters	Doctors	Bachelors	Graduates
N. C. State						
	Biological Sciences:					
	Botany	2	0	0	2	3
	Entomology	0	4	2	7	15
	Genetics	0	1	0	0	7
	Plant Pathology	0	0	1	0	14
	Zoology	8	1	1	11	
	Chemistry	1	4	0		
	Agr. and Biol. Chemistry				16	9
	Experimental Statistics	0	5	5		23
	Horticulture	2	2	0	18	5
	Poultry Science	7	0	0	10	2
	Rural Sociology	1	1	0	6	3
	Engineering:					
	Applied Mathematics					8
	Ceramic	3			30	1
	Chemical	14	4	1	160	17
	Civil	31	6		393	9
	Const. Opt.	6			117	1
	Const. (B.S.)	17			14	
	Electrical	28	1	2	604	12
	Industrial	25			160	3
	Furniture Mfg. and Management	11			40	
	Mechanical	37	5		481	6
	Aero. Opt.	13			158	
	Heating and Air Conditioning	8			69	
	Nuclear	15	13	1	172	35
	Eng. General (B.S.)	1				
	Geological		2		30	1
	Eng. Physics		1	1	11	4
	Forestry	29	9		223	8
	Statistics, Institute of		5	5		23
	Textiles					
	Textiles	86			389	1
	Textile Chemistry	16			29	8
	Textile Manufacturing		2			8

III-B cont.

Institution	Field	Degrees Awarded 1954-1955			Majors in Course, Sept. 1955	
		Bachelors	Masters	Doctors	Bachelors	Graduates
U. N. C.						
	Bacteriology and Immunology	2			4	11
	Biochemistry and Nutrition		1	1		7
	Biostatistics			1		8
	Botany	2	2	4	2	16
	Business Administration and Economics	254	25	3	471	77
	Chemistry	37	5	7	125	50
	City and Regional Planning		9			23
	Dental School	10	3	39	10	189
	Geology and Geography	13	2	2	18	14
	Health Education	2	2	0	2	13
	Maternal and Child Health		1			4
	Mathematics	15	3	3	25	24
	Medical School			59		249
	Mental Health					1
	Nutrition		3			4
	Parasitology		3	1		13
	Pharmacy	40	0	3	38	13
	Physics	9	3	4	41	20
	Physiology			1		4
	Psychology	9	9		41	48
	Public Health Administration	0	14	0	0	18
	Sanitary Engineering		15			28
	Statistics	0	0	4	0	25
	Zoology	11	1	2	20	12

C. SCHOOLS, INSTITUTES, AND SPECIALIZED GROUPS WITHIN INSTITUTION

Duke

Duke Hospital
Engineering, College of; W. J. Seeley, Dean
Forestry, School of; C. F. Korstian, Dean
Graduate School of Arts and Sciences; Marcus E. Hobbs, Dean
Law, School of; J. A. McClain, Dean
Medicine, School of; W. C. Davison, Dean
Nursing, School of; Ann M. Jacobansky, Dean
Physical Therapy, Division of; Miss Helen Kaiser, Director

N. C. State

Agriculture, School of; D. W. Colvard, Dean
Design, School of; Henry L. Kamphoefner, Dean
Engineering, School of; J. H. Lampe, Dean
Forestry, School of; R. J. Preston, Dean
Gaston Technical Institute; Gastonia, N. C.
Graduate School; D. B. Anderson, Dean
Statistics, Institute of; Gertrude M. Cox, Director
Textiles, School of; Malcolm E. Campbell, Dean

U. N. C.

Business Administration, School of; R. J. M. Hobbs, Dean
Dentistry, School of; John C. Brauer, Dean
Government, Institute of; Albert Coates, Director
Graduate School; W. W. Pierson, Dean
Law, School of; H. P. Brandis, Dean
Medicine, School of; W. R. Berryhill, Dean
N. C. Memorial Hospital
Pharmacy, School of; E. A. Brecht, Dean
Public Health, School of; E. G. McGavran, Dean
Statistics, Institute of (Branch of N. C. State Institute of Statistics); Harold Hotelling, Associate Director
Social Science, Institute for Research in; G. W. Blackwell, Director

D. SOURCES OF OUTSIDE SUPPORT AND COOPERATIVE PROGRAMS

Duke

Anatomy

Graduate fellowships from the National Foundation for Infantile Paralysis; National Institute of Public Health, Surgeon General, Department of the Army; Division of International Health, Education and Welfare.

Contracts and research grants in aid are beneficial and are available through the Engineering Division of the Army, The National Foundation for Infantile Paralysis, The Insurance Fund, The National Institute of Public Health, and various pharmaceutical houses such as Ayerst, McKenna and Harrison.

Biochemistry and Nutrition

Fellowships from National Institutes of Health, American Heart Association, Markle Foundation.

Research grants from National Science Foundation, National Institutes of Health, Atomic Energy Commission, Life Insurance Medical Research Fund, American Cancer Society (Committee on Growth, N. R. C.).

Botany

Graduate fellowships from General Foods Corp., Liggett and Myers Tobacco Company, and the National Science Foundation.

Contracts or beneficial interest in grants of funds for research from American Cancer Society, Liggett and Myers Tobacco Company, U. S. Army, and National Science Foundation.

Chemistry

Graduate fellowships from Allied Chemical and Dye Corporation, American Cyanamid Company, Carbide and Carbon Chemical Company, E. I. du Pont de Nemours Company, Eastman Kodak Company, Monsanto Chemical Company, and the National Science Foundation.

Contracts or beneficial interest in grants of funds for research are available through the Allegany Ballistics Laboratory, The Atomic Energy Commission, Damon Runyon Memorial Fund, E. I. du Pont de Nemours Company, Eli Lilly Company, Liggett and Myers Tobacco Company, National Science Foundation, Office of Naval Research, Office of Ordnance Research, Office of Scientific Research, Research Corporation, and the U. S. Public Health Service, and from each of the graduate fellowships listed above except the National Science Foundation.

Duke

Economics

Graduate fellowships from the Population Council and Earhart Foundation.

Contracts or beneficial interest in grants of funds are available through the Rockefeller Foundation, the Carnegie Foundation, The Twentieth Century Fund, The Ford Foundation, and the Fulbright Program.

Engineering

Support of department activity from resources outside the institution include grants of funds from: Ranson, Wallace, and Company, Charlotte, N. C., Duke Power Company, Carolina Power and Light Company, Associated Engineering Company, Charlotte, N. C.

Other funds for developmental work come from outside sources by way of other divisions of the institution which hold the prime contracts.

Forestry

Graduate fellowships from Union Bag and Paper Corporation and Brunswick Pulp and Paper Company.

Grants of funds from Union Bag and Paper Corporation, International Paper Company, Gair Woodlands, Riegel Woodlands and North Carolina Pulp and Paper Company. Grants-in-aid from the U. S. Forest Service.

Mathematics

The Department holds two contracts with the Office of Scientific Research of the Air Research and Development Command.

Medicine

Graduate fellowships from Life Insurance Medical Research Fund, American Heart Association, American Cancer Society, Eli Lilly Company, Damon Runyon Memorial Fund, Kellogg Foundation and U. S. Public Health Service.

Contracts or beneficial interest in grants of funds for research are available through the Life Insurance Medical Research Fund, American Cancer Society, American Heart Association, Smith, Kline and French Company, Baxter Company, Office of Naval Research, U. S. Army, and U. S. Public Health Service.

Microbiology

Grants from the National Tuberculosis Association for the study of the Metabolism of the Tubercle Bacillus and the National

Duke

Institute of Health for the study of Experimental Tuberculous Meningitis in the Rabbit.

Contract from Camp Dietrick for Chemotherapy of Fungus Diseases, also for production of vaccine against coccidioidomycosis.

Pathology

Research and teaching grants from the National Institute of Health, the National Cancer Institute, and from the United Fund.

Pediatrics

Doris Duke Foundation, Atomic Energy Commission, United States Public Health Service.

Physics

Graduate fellowships from The Shell Companies Foundation, E. I. du Pont de Nemours, The National Science Foundation, and the Research Corporation.

Contracts or beneficial interest in grants of funds for research are available through The Atomic Energy Commission, Office of Naval Research, Office of Ordnance Research, the National Science Foundation, Research Corporation, E. I. du Pont de Nemours, the Shell Companies Foundation, Office of Scientific Research of the United States Air Force.

Physiology and Pharmacology

Contracts and grants from Air Force, Navy, U. S. Public Health, Office of Naval Research.

Psychiatry

Research programs are now carried out jointly with the Department of Psychology, Anatomy and Ophthalmology. Sources of support are the University and the National Institute of Mental Health.

Psychology

Graduate fellowships from the National Institute of Mental Health, National Science Foundation, and the Veterans Administration.

Research grants from the National Institute of Mental Health and the National Science Foundation.

Duke

Radiology

U. S. Public Health Service, Atomic Energy Commission, James Picker Foundation, American Cancer Society, and Smith, Kline and French Company.

Surgery

Industrial grants and fellowships: Markle Foundation Fellowship in Medical Science, Viobin Corporation grant, Lederle Laboratories, Ciba Pharmaceutical Company, G. D. Searle Company, Squibb and Sons, Warner-Hudnutt Company, Ayerst, McKenna and Harrison, Ltd., Winthrop Stearns, Smith, Kline and French, American Cyanamid Company, Burroughs-Wellcome and Company, Hoffmann-La Roche, Inc., Raymond C. Henyan Fellowship in Paraplegia, royalties on trichlorethylene inhaler, etc.

Government grants and fellowships: U. S. Public Health Service Fellowships and Research Grants, U. S. Navy Research Grants, Veterans Administration Research Grants, National Cancer Institute Fellowships, National Heart Institute Fellowships, National Research Council Grants, State support of Cerebral Palsy Hospital, U. S. Air Force Fellowships in Orthopedics.

Other grants and fellowships include Damon Runyon Memorial Fund Grants, Raymond C. Henyan Fellowship in Paraplegia, American Cancer Society Grants, American Heart Association Grants, N. C. Heart Association Grants, National Foundation for Infantile Paralysis Grants and Fellowships, fellowships and grants from patients and private individuals for training and research.

Zoology

Graduate fellowships from National Science Foundation and U. S. Public Health.

Contracts and grants for research include American Heart Foundation, U. S. Public Health, Office of Naval Research, and Atomic Energy Commission.

N. C. State

School of Agriculture

U. S. Department of Agriculture: Agricultural Research Administration, Soil Conservation Service, Forest Service, Agricultural Marketing Service.

Air Force, Atomic Energy Commission, Fish and Wildlife Commission, Navy, National Science Foundation, Rural Rehabilitation Corporation, Foreign Aid, Tennessee Valley Authority.

N. C. State

North Carolina Agricultural Extension Service, North Carolina Department of Agriculture, North Carolina Department of Conservation and Development, North Carolina Wild Life Resources Commission, North Carolina Vocational Agriculture.

Allied Chemical and Dye Corporation, American Breeders Service, American Cyanamid Company, American Dairy Association, American Potash Institute, Batelle Institute, Blueberry Corporation, Borden Company, Charles F. Pfizer and Company, Carbide and Carbon Chemicals Corporation, Carolina Sweet Potato Research Committee, Chilean Nitrate Educational Bureau, Climax Molybdenum Company, Commercial Solvents, Dairy Industry Supply Association, E. I. du Pont de Nemours Company, B. F. Goodrich Chemical Company, General Education Board, Hercules Powder Company, Julius Hyman Company, I.B.E.C., Lilliston Implement Company, Monsanto Chemical Corporation, National Cottonseed Products Association, National Pickle Packers Association, National Renderers Association, New Holland Machine Division of the Sperry Corporation, North Carolina Potato Association, Olin Mathieson Chemical Company, Pacific Coast Borax Company, Phillips Petroleum Company, Pittsburgh Agricultural Chemical Company, Rohm and Haas Company, Scott-Viner Company, Shell Chemical Corporation, Smith Douglas Corporation, Southeastern Hail Conference, Stauffer Chemical Company, Swift and Company, Tabor City Marketing Company, Taylor Chemical Company, Tennessee Corporation, Upjohn Company, Velsicol Corporation, Victor Chemical Works, West Virginia Pulp and Paper Company, Zonolite Company, Kellogg Foundation, Rockefeller Foundation, Liggett and Myers Tobacco Company, Imperial Tobacco Company, Bridgforth Tobacco Company, R. J. Reynolds Tobacco Company, American Tobacco Company, Philip Morris Company.

Engineering

Scholarships include: American Enka Corporation, Luther W. Cartwright, Jr. Memorial Fund, Furniture Club of America, Southern Furniture Manufacturers' Association, General Electric Company, Lockheed Aircraft Corporation, Monsanto Chemical Company, The Trane Company, Union Carbide and Carbon Corporation, Radio Corporation of America, Westinghouse Electric Corporation.

Fellowships and Grants include: Edward Orton, Jr., Ceramic Foundation, Pratt-Whitney Company, Newport News Shipbuilding Company, Sperry Gyroscope Company, Wright Air Development Center, American Institute of Chemical Engineers, North State Pyrophyllite Company, Aberdeen Proving Ground (Redstone Arsenal), Philadelphia Ordnance District, National Science Foundation, Office of Naval Research, Bureau of Ships, U. S. Public Health Service.

Ceramic Engineering

Grants from Wright Air Development Center, Carbide and Carbon Chemicals Company, Office of Naval Research, North State Pyrophyllite Company.

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Chemical Engineering

Wright Air Development Center, Atomic Energy Commission, American Institute of Chemical Engineers.

Civil Engineering

Public Health Service, National Science Foundation, Corps of Engineers, U. S. Waterways Experiment Station.

Electrical Engineering

Bureau of Ships.

Industrial Engineering

Southern Furniture Manufacturers Association.

Mathematics

Office of Naval Research, Aberdeen Proving Ground.

Mechanical Engineering

The Texas Company, Bureau of Ships.

Metallurgy

National Science Foundation, Philadelphia Ordnance District.

Physics

Philadelphia Ordnance District, General Electric Company.

Forestry

Southeastern Forest Experiment Station of U. S. Forest Service, N. C. Wildlife Resources Commission, Allied Chemical and Dye Corporation, T.V.A., N. C. Division of Forestry, National Adhesives Division of National Starch Company.

Institute of Statistics

International Basic Economy Corporation; Rockefeller Foundation; Soil Conservation Service; Agricultural Marketing Service; The Dow Chemical Company; Smith, Kline and French; Public Relations Institute, Inc., of Norfolk, Va.; Office of Ordnance Research, U. S. Army.

N. C. State

Textiles

Graduate Fellowships from Underwear Institute, Carbide and Carbon Chemicals Company, Celanese Corporation of America.

Contracts and grants for research include Allied Chemical Company, National Aniline Division; American Cyanamid Corporation; American Enka Corporation; Carbide and Carbon Chemicals Corporation; Celanese Corporation of America; Chemstrand Corporation; Dow Chemical Company; E. I. du Pont de Nemours and Company; General Electric Company; B. F. Goodrich Chemical Company; Hercules Powder Company; Hartford Rayon Company; Avondale Mills of Alabama; Burlington Industries; Randolph Mills; J. P. Stevens and Company; Swift Manufacturing Company; Textiles, Inc.; Borden Manufacturing Company; China Grove Cotton Mills Company; Cross Cotton Mills Company; Deering, Milliken and Company; Fieldcrest Mills; Highland Cotton Mills Company; Linn-Corriher Mills Company; Morgan Cotton Mills Company; Quaker Meadows Mills; Washington Mills Company; Waverly Mills; West Point Manufacturing Company; Shuford Mills; Joanna Cotton Mills Company; Washington Mills, Inc.; American Thread Company; Reeves Bros., Inc.; A. M. Smyre Manufacturing Company; Swift Spinning Mills, Inc.; United Merchants and Manufacturers, Inc.; U. S. Rubber Company; General Development Corporation; Industrial Rayon Corporation; Morningstar-Nicol, Inc.; National Plastics Corporation; Saran Yarns Company; Shell Chemical Corporation; Standard Chemical Products Company; The Underwear Institute; U. S. Department of Agriculture; U. S. Air Force (Wright Air Development Center); U. S. Army; Virginia-Carolina Chemical Company; Wright Machinery Corporation.

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Anatomy

Grants from the National Cancer Institute of the U. S. Public Health Service, Atomic Energy Commission, and the United Fund. Also, Institutional grants from the American Cancer Society.

Bacteriology and Immunology

Fellowship from National Science Foundation.

Grants or contracts from the Office of Naval Research, Council on Pharmacy and Chemistry of the American Medical Association, and National Institutes of Health of the Department of Health, Education, and Welfare.

Biochemistry and Nutrition

Graduate fellowships from U. S. Public Health Service, Lederle Medical Student Summer Fellowship and U. S. Public Health Service Summer Fellowship.

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Grants of funds for research from United Fund Research Foundation, Life Insurance Medical Research Fund, U. S. Public Health Service, and the American Cancer Society.

Biostatistics

Grants of funds for research from United States Public Health Service; Office of Ordnance Research; Revolving Fund, Institute of Statistics; and Rockefeller Medical Foundation Project to study General Practice of Medicine.

Botany

William Chambers Coker fellowship.

Grants in aid from Alumni Annual Giving, National Science Foundation, American Cancer Society, and several individuals.

Business Administration and Economics

Business Foundation of North Carolina, established in 1946.

Through the Business Foundation the Wachovia Bank and Trust Company has endowed a Chair of Banking. Likewise, Burlington Industries has endowed a Chair of Business Administration.

Reynolds Student Investment Trust.
Julian Price Endowed Professorship in Life Insurance.
Many scholarships are given annually by accounting firms and trucking lines.

Chemistry

Graduate fellowships from American Enka Corporation, American Viscose Corporation, E. I. du Pont de Nemours and Company, Eastman Kodak Company, Eli Lilly and Company, Wm. S. Merrell Company, Morehead Foundation, Philip Morris and Company, Reynolds Tobacco Company, and Virginia-Carolina Chemical Corporation.

Contracts or grants-in-aid for research available from all companies listed above (except Morehead Foundation and American Enka Corporation) and also from the Office of Ordnance Research, Atomic Energy Commission, Office of Air Research, Office of Naval Research, Research Corporation, and National Lead Company.

City and Regional Planning

Support of Department activity from sources outside the institution have included contracts with federal agencies such as the U. S. Air Force, T.V.A., and the Housing and Home Finance Agency for contract research as well as contracts with municipalities and private corporations covering expenses on graduate student projects.

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Dentistry

National Cancer Fund, United States Air Force, Dental Foundation of North Carolina, Inc.

Epidemiology

National Heart Institute - National Institutes of Health.

Experimental Medicine

United States Public Health Service.

Health Education

Grant on Indian Project.

Maternal and Child Health

Children's Bureau of Department of Health, Education and Welfare.

Mathematics

Grants or contracts from Office of Scientific Research, Air Research and Development Command. Computing facilities at Oak Ridge National Laboratory and the U. S. Naval Ordnance Test Station available.

Medicine

Research Grants: United States Public Health Service, Edgecomb-Nash Heart Association, Geigy Company, N. C. Heart Association, Department of the Army, Wilkes County Heart Association.

Training Grants: United States Public Health Service.

Fellowships and Traineeships: American Trudeau Society, United States Public Health Service, National Heart Institute, Commonwealth Fund, American College of Physicians, Life Insurance Medical Research Fund.

Mental Health

The entire program is made possible through a training grant to the University of North Carolina's School of Public Health from the United States Public Health Service.

Nutrition

U. S. Children's Bureau--for teaching, scholarships.
U. S. Public Health Service--for research.

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Parasitology

United States Public Health Service.

Pathology

The John and Mary Markle Foundation, United States Public Health Service Grants and an Army Contract.

Pediatrics

Traineeship from the National Institute of Arthritis and Metabolic Diseases.

Grants of funds for research are available through the National Foundation for Infantile Paralysis, Inc., the Elsa U. Pardee Foundation, the United Fund Research Foundation, the Orange County Tuberculosis Fund, the North Carolina State Board of Health and the U. S. Department of Health, Education and Welfare.

Pharmacology

Research grants from U. S. Public Health Service, National Science Foundation, and National Research Council.

Pharmacy

Graduate fellowships are available from Vick Chemical Company, William S. Merrell Company and Richardson Foundation through the North Carolina Pharmaceutical Research Foundation, and National Institutes of Health, United States Public Health Service.

Grants are available from the North Carolina Pharmaceutical Research Foundation and the American Foundation for Pharmaceutical Education.

Physics

Contracts for research projects from Atomic Energy Commission, Office of Ordnance Research, Office of Naval Research, and National Science Foundation.

Physiology

Contracts or beneficial interest in grants of funds for research are available through the U. S. Public Health Service, Office of Naval Research, American Heart Association, American Medical Association, Alumni Research Council Grant, Muscular Dystrophy Association of America, and Life Insurance Research Fund.

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Psychiatry

This department received three training grants from the U. S. Public Health Service to support experiments in undergraduate education as well as support for the program of graduate (residency) training. Stipends for residency training are also received from the N. C. Hospitals Board of Control.

Partial support is received from the Commonwealth Fund as part of the program in the General Clinic of the Hospital.

Funds are received annually from the N. C. Hospitals Board of Control Alcoholic Rehabilitation Program to give special emphasis to research, training, and service in the area of alcoholism.

Psychology

Graduate fellowships from the United States Public Health Service, Veterans Administration Traineeships in which the student works for pay in a Veterans Administration installation.

Research contracts or grants are available through: Science Research Associates, Ford Foundation, National Science Foundation, A. C. Sparkplug Division of General Motors, American Council on Education.

Sanitary Engineering

National Institutes of Health, National Science Foundation, International Cooperation Administration, World Health Organization.

Statistics

Graduate fellowships from Natural Science Foundation, Canadian National Research Council, Social Science Research Council, Institute of International Education, Esso Research Laboratories.

Contracts or beneficial interest in grants of funds for research are available through the Office of Naval Research, Office of Scientific Research, Air Materiel Command, Adjutant Generals Office, National Research Council, Ford Foundation, Institute of Statistics Revolving Research Fund.

Surgery

United States Public Health Service grants, National Institutes of Health, Burroughs Wellcome, Sharp and Dohme, Ohio Chemical Company, W. S. Merrill Company, N. C. Heart Fund.

U. N. C.

Zoology

Graduate fellowship support, at present, is from National Institutes of Health and Danforth Foundation Fellowship Fund.

Research grants are from U. S. Fish and Wildlife Service, U. S. Public Health Service, and U. S. Atomic Energy Commission.

E. GENERAL LIBRARY RESOURCES

Duke

Building and Size of the Collection.

The General Library Building is located in the heart of the University campus convenient to classrooms, dormitories and public transportation facilities. Six reading areas have a seating capacity of 750 readers. In the air-conditioned stacks are 250 individual study carrells, 42 of which are completely enclosed, for the use of members of the faculty, graduate students, and visiting scholars.

On June 30, 1955, the Duke University Libraries contained 1,198,497 volumes, 750,000 of which are housed in the General Library. About 4,000 journals are received currently. The collection ranks thirteenth in size among university libraries in the United States. A 1946 survey of the holdings (in 55 research libraries of the United States and Canada) of the most cited scientific periodicals in the fields of mathematics, physics, chemistry, botany, and physiology ranked Duke University Library in 15th place. The Libraries also contain 1,623,000 manuscripts, 7,500 reels of microfilm, and 13,000 volumes of newspapers.

Resources.

The collection of reference and bibliographic tools is large and generally strong, containing recent and older editions of the major encyclopedias of the world, dictionaries in all languages, general handbooks, author and subject bibliographies, trade bibliographies and all the major periodical indexes.

The Library has been a depository for federal documents since 1890 and holds most of the series virtually complete.

State documents are systematically collected in cooperation with the University of North Carolina Library under an agreement providing for nationwide coverage in this field.

The collection of foreign documents is particularly strong for European and Latin American countries and for Great Britain and the Commonwealth nations.

The Library is a depository for Atomic Energy Commission publications which are housed in the Physics-Mathematics Library, along with the atomic energy publications of Great Britain and Canada.

The collection of periodicals in both scientific and non-scientific fields is strong, with a total current subscription list for all libraries of about 4,000 titles.

Duke

Unique in this area is the collection of academy publications of fifty or more European academies.

Services.

The microphotography laboratory is equipped with modern facilities for the production of 35 mm negative microfilm and positive paper prints and slides. Both portable and stationary equipment for the reading of microfilm and microprint is available.

A staff of five reference librarians are available to assist readers in the use of general and specialized materials, including government documents.

The services of the Duke University Library are available, upon application, to all scholars. Materials not available at Duke may be obtained through the Inter-library Loan Service or by direct borrowing from the Library of the University of North Carolina.

Duke Hospital Library.

Duke Hospital Library contains 54,216 volumes of American and foreign medical literature and subscribes to 675 current American and foreign medical and other scientific journals. These books and journals are available daily for the students, nurses, staff, and medical profession.

N. C. State

The State College Library has excellent resources in materials and equipment for the research worker.

In March, 1955, a new one and a half million dollar library building was dedicated which offers an exceptionally fine literature laboratory for all those concerned with research. The building is well-lighted, acoustically treated, and is designed to provide the user with a functional, cheerful, inviting place in which to do his work.

Resources.

As of July 1, 1955, the Library held 148,261 volumes of books and bound journals. The collection has been selected to reflect strongly the scientific and technological interests of the college. It is, therefore, actually richer than the size of the collection might suggest.

At the present time, the library receives over 1,800 current periodicals. Most of them are in the fields of science and technology and represent the cream of the literature sources.

N. C. State

The State College Library has been a depository for the publications of the Federal Government since 1923. It receives automatically all publications of the U. S. Government which are available for distribution. At the present time it has over 14,800 bound volumes of documents, and over 3,000,000 unbound items such as reports, bulletins, circulars, and various printed matters prepared by the different government agencies. This includes, of course, publications of the U.S.D.A., National Bureau of Standards, Bureau of Mines, Geological Survey, and other agencies that prepare technical reports.

The Library receives on exchange all the publications of the various Agricultural Experiment Stations. Its files are almost 100% complete.

The Library receives on exchange all the publications of the various Engineering Research Stations throughout the U. S. Of these, its holdings are excellent.

The Library is one of 41 depositories designated by the Atomic Energy Commission to receive all of its unclassified and declassified publications. Of these there are most excellent files at the Library. The Atomic Energy Commission also invites, through the State College Library, use of any unclassified material unavailable at State College. This can be secured in a very short time.

The State College Library also receives the publications of the Canadian Atomic Energy Commission, and the Atomic Energy Commission of Great Britain.

The Library receives on exchange the research publications of many foreign countries, especially those dealing with biological research and technology and engineering.

The Library is a complete depository for all the publications of the Geological Society of America. It has a complete file of all these.

The Library is a "selective depository" for the publications of the Carnegie Institution of Washington. It has excellent files of these valuable monographs.

Special Services.

The Library is equipped to do photoprinting and microfilming service for the research worker. This enables the researcher to secure copies of material pertinent to his research project. Reading machines are available for viewing any type of microprint.

A highly trained staff of professional librarians is always ready to assist the researcher in locating his materials and in making available to him the necessary tools and indexes for a "literature search" of his special interest.

N. C. State

The resources of the College Library together with the generous assistance given us by our sister institution, the University Library at Chapel Hill, and inter-library loan service from other scientific libraries, make the D. H. Hill Library of North Carolina State College an indispensable laboratory for the research worker in our area.

School of Agriculture.

Most departments in the School of Agriculture have departmental libraries. These contain, in general, only those books and periodicals which are of immediate concern to the department and are in no way complete. The reference material for the most part is a duplication of that held in the D. H. Hill Library.

There is one notable exception. The Zoology section of the Division of Biological Sciences has excellent library facilities in the field of wildlife research and animal ecology.

School of Engineering.

The Library has very complete holdings of engineering periodicals and references and is adequate for most research in the fields of engineering covered by departments of specialization in the School of Engineering.

School of Textiles.

The Textile Library is available in the Textile Building. It is one of the most complete collections in the world.

U. N. C.

Building and Size of the Collection.

The General Library Building, including the enlarged addition that was completed in 1952, is in the center of the campus convenient to classroom buildings and dormitories. There are 2,255 seats for study in 5 general and 6 special reading rooms. The air-conditioned bookstack contains 481 typical carrels and 30 moveable carrel desks for the use of graduate students and faculty. There are 11 seminar, conference and discussion rooms and 34 air-conditioned locked individual studies located in or adjacent to the bookstack for the use of faculty, visiting scholars and creative writers. The entire building has a capacity for 1,130,000 volumes.

On June 30, 1955 the Library contained 736,926 volumes, 532,000 of which are housed in the General Library Building. About 5,200 serials are received currently. The collection ranks third in the Southeast and first in bibliographical and manuscript

U. N. C.

resources pertaining to the region. The Library contains 2,560,428 manuscripts, 82,000 maps, 70,000 microprints and microcards, 5,200 microfilm reels, 165,000 pamphlets, 20,000 pictures, prints, and photographs, 6,100 recordings, and 5,700 slides. In all, the Library contains more than 4,000,000 items.

Resources.

The collection of reference and bibliographic tools is large and generally strong and contains general and specialized dictionaries and encyclopedias of the world. About 11,000 volumes of reference materials including bibliographies, indexes, and catalogues are shelved in the main Reference Room. This collection is particularly strong in national bibliography of the United States, Great Britain, France, Germany, Spain, and Latin American countries, and additional indexes and bibliographies of countries scattered over a wide territory.

The Library has been a depository for publications of the federal government since 1884. For the period before 1884 the files are substantially complete.

The Library's state documents collection is outstanding for its completeness and extensiveness. The acquisition of the complete file of the scarce and rare early state records on microfilm in the form of the Records of the States of the United States: A Microfilm Compilation makes the state documents collection virtually complete.

The collection of foreign documents is especially strong in the publications of British, French, other European and Latin American countries. The Library is a depository for United National publications and has virtually a complete file of them.

Thirteen departmental libraries are located on the campus, devoted to Art, Botany, Chemistry, Economics and Business Administration, Geology, Institute of Government, Law, Library Science, Mathematics-Statistics-Physics, Music, Psychology, Sociology-Anthropology-Planning, and Zoology. Holdings in all these fields are particularly strong.

The Southern Historical Collection contains almost 3,000,000 manuscripts relating to the South from colonial times to the present. The collection is particularly strong for the period from 1800 to 1860 and during the confederacy.

The North Carolina Collection is unrivalled in completeness of materials relating to North Carolina. The map, picture, and newspaper collections are particularly strong. It is also rich in early North Carolina imprints and early books relating to the State.

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The Hanes Collection of the History of the Development and Origin of the Book housed in the Rare Book Room contains more than 650 incunabula and about 500 items of 16th, 17th, and 18th century examples of printing that illustrate the history of printing as well as many fine examples of modern printing.

The Graphic Arts Collection contains about 5,000 prints illustrating the work of European and American artists.

Important literary and historical collections include the William Henry Hoyt Collection of French History particularly strong in materials relating to Napoleon and the French Revolution; The Archibald Henderson Collection of Materials Relating to George Bernard Shaw; the Whitaker Collections relating to Charles Dickens, Samuel Johnson and James Boswell, George Cruikshank, William Makepeace Thackery, original Shakespeare folios; the Jente Collection of Proverbs, the Tannenbaum Shakespeare collection; the Nolen Collection of city and regional planning; the Chester N. Gould Collection of Scandinavian literature and philology; the Preston Davie Collection of Raleighiana, Caroliniana and early Americana; the Bruce Cotten Collection of North Caroliniana; the Bowman Gray Collections on World War I and II; the Thomas Wolfe collection; together with unusual collections of American drama, Spanish drama, folklore, Latin American studies, Southern literature, Romance languages, and maps.

The Library has exceptional holdings in the publications of learned societies and European academies.

Services.

The photoduplication laboratory is equipped with facilities for producing 35 mm negative microfilm, photostats, photoprints, lantern slides (color and black and white) and photographs. Both portable and stationary equipment for reading microfilm and microprint is available.

A staff of four reference librarians is available for assisting readers in the use of general and specialized materials. In addition, the Documents Department staff is equipped to give exceptional assistance to users of government publications.

A union catalog containing author cards for books in the Duke University and other libraries in North Carolina is located in the General Library. The materials housed in the U. N. C. Library are available to all scholars through Inter-Library Loan and the Reference Staff will borrow materials not in the U. N. C. Library from other libraries.

U. N. C.

Division of Health Affairs.

This Library, which serves the Schools of Dentistry, Public Health, Pharmacy, Nursing, as well as the School of Medicine, contains basic and up-to-date literature of all five disciplines. Though only three years old, and developed upon the original basic-science library of the pre-center period, prior to the four year program of the School of Medicine, it has doubled its holdings and is increasing at the rate of 3,000 to 5,000 volumes per year.

These holdings, approximately 50,000 volumes, with a current periodical acquisition of 800 titles, include complete runs of all reputable American medical, public health, nursing, and dental periodicals. As a matter of fact, this Library contains the only extensive dental periodical files in the Southeastern area. Another exclusive in this collection is the extensive runs of state medical journals, files of which are not sought nor maintained by any other Library in North Carolina. Also, the Pharmacy Library of the Division of Health Affairs, contains complete files of all leading commercial and research journals in that field, notably Beilstein, Chemical Abstracts, and the most important foreign research periodicals--the only Pharmaceutical collection of stature in the Southern Region.

The medical collections include all and complete files of index and abstract journals, i.e., Current List of Medical Literature, Index Medicus, Q. C. I. M., Excerpta Medica (all seventeen sections) Surgeon-General's Catalog, the Zentrallblatter, etc., as well as files of all outstanding foreign research, speciality, and leading national periodicals.

Its book collections, besides up-to-date and classic titles of all medical subjects, contains a wide selection of domestic and foreign biographical directories, i.e., American Medical Association Directories, Hirsch, A. P. A. Directory, American Men of Science, Kelly, etc.